HP ProLiant SL165z G7 Server

Maintenance and Service Guide

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Customer self repair

HP products are designed with many Customer Self Repair (CSR) parts to minimize repair time and allow for greater flexibility in performing defective parts replacement. If during the diagnosis period HP (or HP service providers or service partners) identifies that the repair can be accomplished by the use of a CSR part, HP will ship that part directly to you for replacement. There are two categories of CSR parts:

- **Mandatory**—Parts for which customer self repair is mandatory. If you request HP to replace these parts, you will be charged for the travel and labor costs of this service.
- **Optional**—Parts for which customer self repair is optional. These parts are also designed for customer self repair. If, however, you require that HP replace them for you, there may or may not be additional charges, depending on the type of warranty service designated for your product.

NOTE: Some HP parts are not designed for customer self repair. In order to satisfy the customer warranty, HP requires that an authorized service provider replace the part. These parts are identified as "No" in the Illustrated Parts Catalog.

Based on availability and where geography permits, CSR parts will be shipped for next business day delivery. Same day or four-hour delivery may be offered at an additional charge where geography permits. If assistance is required, you can call the HP Technical Support Center and a technician will help you over the telephone. HP specifies in the materials shipped with a replacement CSR part whether a defective part must be returned to HP. In cases where it is required to return the defective part to HP, you must ship the defective part back to HP within a defined period of time, normally five (5) business days. The defective part must be returned with the associated documentation in the provided shipping material. Failure to return the defective part may result in HP billing you for the replacement. With a customer self repair, HP will pay all shipping and part return costs and determine the courier/carrier to be used.

For more information about HP's Customer Self Repair program, contact your local service provider. For the North American program, refer to the HP website (**http://www.hp.com/go/selfrepair**).

Parts only warranty service

Your HP Limited Warranty may include a parts only warranty service. Under the terms of parts only warranty service, HP will provide replacement parts free of charge.

For parts only warranty service, CSR part replacement is mandatory. If you request HP to replace these parts, you will be charged for the travel and labor costs of this service.

Réparation par le client (CSR)

Les produits HP comportent de nombreuses pièces CSR (Customer Self Repair = réparation par le client) afin de minimiser les délais de réparation et faciliter le remplacement des pièces défectueuses. Si pendant la période de diagnostic, HP (ou ses partenaires ou mainteneurs agréés) détermine que la réparation peut être effectuée à l'aide d'une pièce CSR, HP vous l'envoie directement. Il existe deux catégories de pièces CSR:

- **Obligatoire** - Pièces pour lesquelles la réparation par le client est obligatoire. Si vous demandez à HP de remplacer ces pièces, les coûts de déplacement et main d'œuvre du service vous seront facturés.
- **Facultatif** - Pièces pour lesquelles la réparation par le client est facultative. Ces pièces sont également conçues pour permettre au client d'effectuer lui-même la réparation. Toutefois, si vous demandez à HP de remplacer ces pièces, l'intervention peut ou non vous être facturée, selon le type de garantie applicable à votre produit.

REMARQUE: Certaines pièces HP ne sont pas conçues pour permettre au client d'effectuer lui-même la réparation. Pour que la garantie puisse s'appliquer, HP exige que le remplacement de la pièce soit effectué par un Mainteneur Agréé. Ces pièces sont identifiées par la mention "Non" dans le Catalogue illustré.

Les pièces CSR sont livrées le jour ouvré suivant, dans la limite des stocks disponibles et selon votre situation géographique. Si votre situation géographique le permet et que vous demandez une livraison le jour même ou dans les 4 heures, celle-ci vous sera facturée. Pour bénéficier d'une assistance téléphonique, appelez le Centre d'assistance technique HP. Dans les documents envoyés avec la pièce de rechange CSR, HP précise s'il est nécessaire de lui retourner la pièce défectueuse. Si c'est le cas, vous devez le faire dans le délai indiqué, généralement cinq (5) jours ouvrés. La pièce et sa documentation doivent être retournées dans l'emballage fourni. Si vous ne retournez pas la pièce défectueuse, HP se réserve le droit de vous facturer les coûts de remplacement. Dans le cas d'une pièce CSR, HP supporte l'ensemble des frais d'expédition et de retour, et détermine la société de courses ou le transporteur à utiliser.

Pour plus d'informations sur le programme CSR de HP, contactez votre Mainteneur Agrée local. Pour plus d'informations sur ce programme en Amérique du Nord, consultez le site Web HP (**http://www.hp.com/go/selfrepair**).

Service de garantie "pièces seules"

Votre garantie limitée HP peut inclure un service de garantie "pièces seules". Dans ce cas, les pièces de rechange fournies par HP ne sont pas facturées.

Dans le cadre de ce service, la réparation des pièces CSR par le client est obligatoire. Si vous demandez à HP de remplacer ces pièces, les coûts de déplacement et main d'œuvre du service vous seront facturés.

Riparazione da parte del cliente

Per abbreviare i tempi di riparazione e garantire una maggiore flessibilità nella sostituzione di parti difettose, i prodotti HP sono realizzati con numerosi componenti che possono essere riparati direttamente dal cliente (CSR, Customer Self Repair). Se in fase di diagnostica HP (o un centro di servizi o di assistenza HP) identifica il guasto come riparabile mediante un ricambio CSR, HP lo spedirà direttamente al cliente per la sostituzione. Vi sono due categorie di parti CSR:

- **Obbligatorie** – Parti che devono essere necessariamente riparate dal cliente. Se il cliente ne affida la riparazione ad HP, deve sostenere le spese di spedizione e di manodopera per il servizio.
- **Opzionali** – Parti la cui riparazione da parte del cliente è facoltativa. Si tratta comunque di componenti progettati per questo scopo. Se tuttavia il cliente ne richiede la sostituzione ad HP, potrebbe dover sostenere spese addizionali a seconda del tipo di garanzia previsto per il prodotto.

NOTA: alcuni componenti HP non sono progettati per la riparazione da parte del cliente. Per rispettare la garanzia, HP richiede che queste parti siano sostituite da un centro di assistenza autorizzato. Tali parti sono identificate da un "No" nel Catalogo illustrato dei componenti.

In base alla disponibilità e alla località geografica, le parti CSR vengono spedite con consegna entro il giorno lavorativo seguente. La consegna nel giorno stesso o entro quattro ore è offerta con un supplemento di costo solo in alcune zone. In caso di necessità si può richiedere l'assistenza telefonica di un addetto del centro di supporto tecnico HP. Nel materiale fornito con una parte di ricambio CSR, HP specifica se il cliente deve restituire dei componenti. Qualora sia richiesta la resa ad HP del componente difettoso, lo si deve spedire ad HP entro un determinato periodo di tempo, generalmente cinque (5) giorni lavorativi. Il componente difettoso deve essere restituito con la documentazione associata nell'imballo di spedizione fornito. La mancata restituzione del componente può comportare la fatturazione del ricambio da parte di HP. Nel caso di riparazione da parte del cliente, HP sostiene tutte le spese di spedizione e resa e sceglie il corriere/vettore da utilizzare.

Per ulteriori informazioni sul programma CSR di HP contattare il centro di assistenza di zona. Per il programma in Nord America fare riferimento al sito Web HP (**http://www.hp.com/go/selfrepair**).

Servizio di garanzia per i soli componenti

La garanzia limitata HP può includere un servizio di garanzia per i soli componenti. Nei termini di garanzia del servizio per i soli componenti, HP fornirà gratuitamente le parti di ricambio.

Per il servizio di garanzia per i soli componenti è obbligatoria la formula CSR che prevede la riparazione da parte del cliente. Se il cliente invece richiede la sostituzione ad HP, dovrà sostenere le spese di spedizione e di manodopera per il servizio.

Customer self repair

HP Produkte enthalten viele CSR-Teile (Customer Self Repair), um Reparaturzeiten zu minimieren und höhere Flexibilität beim Austausch defekter Bauteile zu ermöglichen. Wenn HP (oder ein HP Servicepartner) bei der Diagnose feststellt, dass das Produkt mithilfe eines CSR-Teils repariert werden kann, sendet Ihnen HP dieses Bauteil zum Austausch direkt zu. CSR-Teile werden in zwei Kategorien unterteilt:

- **Zwingend –** Teile, für die das Customer Self Repair-Verfahren zwingend vorgegeben ist. Wenn Sie den Austausch dieser Teile von HP vornehmen lassen, werden Ihnen die Anfahrt- und Arbeitskosten für diesen Service berechnet.
- **Optional –** Teile, für die das Customer Self Repair-Verfahren optional ist. Diese Teile sind auch für Customer Self Repair ausgelegt. Wenn Sie jedoch den Austausch dieser Teile von HP vornehmen lassen möchten, können bei diesem Service je nach den für Ihr Produkt vorgesehenen Garantiebedingungen zusätzliche Kosten anfallen.

HINWEIS: Einige Teile sind nicht für Customer Self Repair ausgelegt. Um den Garantieanspruch des Kunden zu erfüllen, muss das Teil von einem HP Servicepartner ersetzt werden. Im illustrierten Teilekatalog sind diese Teile mit „No" bzw. „Nein" gekennzeichnet.

CSR-Teile werden abhängig von der Verfügbarkeit und vom Lieferziel am folgenden Geschäftstag geliefert. Für bestimmte Standorte ist eine Lieferung am selben Tag oder innerhalb von vier Stunden gegen einen Aufpreis verfügbar. Wenn Sie Hilfe benötigen, können Sie das HP technische Support Center anrufen und sich von einem Mitarbeiter per Telefon helfen lassen. Den Materialien, die mit einem CSR-Ersatzteil geliefert werden, können Sie entnehmen, ob das defekte Teil an HP zurückgeschickt werden muss. Wenn es erforderlich ist, das defekte Teil an HP zurückzuschicken, müssen Sie dies innerhalb eines vorgegebenen Zeitraums tun, in der Regel innerhalb von fünf (5) Geschäftstagen. Das defekte Teil muss mit der zugehörigen Dokumentation in der Verpackung zurückgeschickt werden, die im Lieferumfang enthalten ist. Wenn Sie das defekte Teil nicht zurückschicken, kann HP Ihnen das Ersatzteil in Rechnung stellen. Im Falle von Customer Self Repair kommt HP für alle Kosten für die Lieferung und Rücksendung auf und bestimmt den Kurier-/Frachtdienst.

Weitere Informationen über das HP Customer Self Repair Programm erhalten Sie von Ihrem Servicepartner vor Ort. Informationen über das CSR-Programm in Nordamerika finden Sie auf der HP Website unter (**http://www.hp.com/go/selfrepair**).

Parts-only warranty service (Garantieservice ausschließlich für Teile)

Ihre HP Garantie umfasst möglicherweise einen Parts-only Warranty Service (Garantieservice ausschließlich für Teile). Gemäß den Bestimmungen des Parts-only Warranty Service stellt HP Ersatzteile kostenlos zur Verfügung.

Für den Parts-only Warranty Service ist das CSR-Verfahren zwingend vorgegeben. Wenn Sie den Austausch dieser Teile von HP vornehmen lassen, werden Ihnen die Anfahrt- und Arbeitskosten für diesen Service berechnet.

Reparaciones del propio cliente

Los productos de HP incluyen muchos componentes que el propio usuario puede reemplazar (*Customer Self Repair*, CSR) para minimizar el tiempo de reparación y ofrecer una mayor flexibilidad a la hora de realizar sustituciones de componentes defectuosos. Si, durante la fase de diagnóstico, HP (o los proveedores o socios de servicio de HP) identifica que una reparación puede llevarse a cabo mediante el uso de un componente CSR, HP le enviará dicho componente directamente para que realice su sustitución. Los componentes CSR se clasifican en dos categorías:

- **Obligatorio:** componentes para los que la reparación por parte del usuario es obligatoria. Si solicita a HP que realice la sustitución de estos componentes, tendrá que hacerse cargo de los gastos de desplazamiento y de mano de obra de dicho servicio.
- **Opcional:** componentes para los que la reparación por parte del usuario es opcional. Estos componentes también están diseñados para que puedan ser reparados por el usuario. Sin embargo, si precisa que HP realice su sustitución, puede o no conllevar costes adicionales, dependiendo del tipo de servicio de garantía correspondiente al producto.

NOTA: Algunos componentes no están diseñados para que puedan ser reparados por el usuario. Para que el usuario haga valer su garantía, HP pone como condición que un proveedor de servicios autorizado realice la sustitución de estos componentes. Dichos componentes se identifican con la palabra "No" en el catálogo ilustrado de componentes.

Según la disponibilidad y la situación geográfica, los componentes CSR se enviarán para que lleguen a su destino al siguiente día laborable. Si la situación geográfica lo permite, se puede solicitar la entrega en el mismo día o en cuatro horas con un coste adicional. Si precisa asistencia técnica, puede llamar al Centro de asistencia técnica de HP y recibirá ayuda telefónica por parte de un técnico. Con el envío de materiales para la sustitución de componentes CSR, HP especificará si los componentes defectuosos deberán devolverse a HP. En aquellos casos en los que sea necesario devolver algún componente a HP, deberá hacerlo en el periodo de tiempo especificado, normalmente cinco días laborables. Los componentes defectuosos deberán devolverse con toda la documentación relacionada y con el embalaje de envío. Si no enviara el componente defectuoso requerido, HP podrá cobrarle por el de sustitución. En el caso de todas sustituciones que lleve a cabo el cliente, HP se hará cargo de todos los gastos de envío y devolución de componentes y escogerá la empresa de transporte que se utilice para dicho servicio.

Para obtener más información acerca del programa de Reparaciones del propio cliente de HP, póngase en contacto con su proveedor de servicios local. Si está interesado en el programa para Norteamérica, visite la página web de HP siguiente (**http://www.hp.com/go/selfrepair**).

Servicio de garantía exclusivo de componentes

La garantía limitada de HP puede que incluya un servicio de garantía exclusivo de componentes. Según las condiciones de este servicio exclusivo de componentes, HP le facilitará los componentes de repuesto sin cargo adicional alguno.

Para este servicio de garantía exclusivo de componentes, es obligatoria la sustitución de componentes por parte del usuario (CSR). Si solicita a HP que realice la sustitución de estos componentes, tendrá que hacerse cargo de los gastos de desplazamiento y de mano de obra de dicho servicio.

Customer self repair

Veel onderdelen in HP producten zijn door de klant zelf te repareren, waardoor de reparatieduur tot een minimum beperkt kan blijven en de flexibiliteit in het vervangen van defecte onderdelen groter is. Deze onderdelen worden CSR-onderdelen (Customer Self Repair) genoemd. Als HP (of een HP Service Partner) bij de diagnose vaststelt dat de reparatie kan worden uitgevoerd met een CSR-onderdeel, verzendt HP dat onderdeel rechtstreeks naar u, zodat u het defecte onderdeel daarmee kunt vervangen. Er zijn twee categorieën CSR-onderdelen:

- **Verplicht:** Onderdelen waarvoor reparatie door de klant verplicht is. Als u HP verzoekt deze onderdelen voor u te vervangen, worden u voor deze service reiskosten en arbeidsloon in rekening gebracht.
- **Optioneel:** Onderdelen waarvoor reparatie door de klant optioneel is. Ook deze onderdelen zijn ontworpen voor reparatie door de klant. Als u echter HP verzoekt deze onderdelen voor u te vervangen, kunnen daarvoor extra kosten in rekening worden gebracht, afhankelijk van het type garantieservice voor het product.

OPMERKING: Sommige HP onderdelen zijn niet ontwikkeld voor reparatie door de klant. In verband met de garantievoorwaarden moet het onderdeel door een geautoriseerde Service Partner worden vervangen. Deze onderdelen worden in de geïllustreerde onderdelencatalogus aangemerkt met "Nee".

Afhankelijk van de leverbaarheid en de locatie worden CSR-onderdelen verzonden voor levering op de eerstvolgende werkdag. Levering op dezelfde dag of binnen vier uur kan tegen meerkosten worden aangeboden, indien dit mogelijk is gezien de locatie. Indien assistentie gewenst is, belt u een HP Service Partner om via de telefoon technische ondersteuning te ontvangen. HP vermeldt in de documentatie bij het vervangende CSR-onderdeel of het defecte onderdeel aan HP moet worden geretourneerd. Als het defecte onderdeel aan HP moet worden teruggezonden, moet u het defecte onderdeel binnen een bepaalde periode, gewoonlijk vijf (5) werkdagen, retourneren aan HP. Het defecte onderdeel moet met de bijbehorende documentatie worden geretourneerd in het meegeleverde verpakkingsmateriaal. Als u het defecte onderdeel niet terugzendt, kan HP u voor het vervangende onderdeel kosten in rekening brengen. Bij reparatie door de klant betaalt HP alle verzendkosten voor het vervangende en geretourneerde onderdeel en kiest HP zelf welke koerier/transportonderneming hiervoor wordt gebruikt.

Neem contact op met een Service Partner voor meer informatie over het Customer Self Repair programma van HP. Informatie over Service Partners vindt u op de HP website (**http://www.hp.nl/services/servicepartners**).

Garantieservice "Parts Only"

Het is mogelijk dat de HP garantie alleen de garantieservice "Parts Only" omvat. Volgens de bepalingen van de Parts Only garantieservice zal HP kosteloos vervangende onderdelen ter beschikking stellen.

Voor de Parts Only garantieservice is vervanging door CSR-onderdelen verplicht. Als u HP verzoekt deze onderdelen voor u te vervangen, worden u voor deze service reiskosten en arbeidsloon in rekening gebracht.

Reparo feito pelo cliente

Os produtos da HP são projetados com muitas peças para reparo feito pelo cliente (CSR) de modo a minimizar o tempo de reparo e permitir maior flexibilidade na substituição de peças com defeito. Se, durante o período de diagnóstico, a HP (ou fornecedores/parceiros de serviço da HP) concluir que o reparo pode ser efetuado pelo uso de uma peça CSR, a peça de reposição será enviada diretamente ao cliente. Existem duas categorias de peças CSR:

- **Obrigatória** – Peças cujo reparo feito pelo cliente é obrigatório. Se desejar que a HP substitua essas peças, serão cobradas as despesas de transporte e mão-de-obra do serviço.
- **Opcional** – Peças cujo reparo feito pelo cliente é opcional. Essas peças também são projetadas para o reparo feito pelo cliente. No entanto, se desejar que a HP as substitua, pode haver ou não a cobrança de taxa adicional, dependendo do tipo de serviço de garantia destinado ao produto.

OBSERVAÇÃO: Algumas peças da HP não são projetadas para o reparo feito pelo cliente. A fim de cumprir a garantia do cliente, a HP exige que um técnico autorizado substitua a peça. Essas peças estão identificadas com a marca "No" (Não), no catálogo de peças ilustrado.

Conforme a disponibilidade e o local geográfico, as peças CSR serão enviadas no primeiro dia útil após o pedido. Onde as condições geográficas permitirem, a entrega no mesmo dia ou em quatro horas pode ser feita mediante uma taxa adicional. Se precisar de auxílio, entre em contato com o Centro de suporte técnico da HP para que um técnico o ajude por telefone. A HP especifica nos materiais fornecidos com a peça CSR de reposição se a peça com defeito deve ser devolvida à HP. Nos casos em que isso for necessário, é preciso enviar a peça com defeito à HP dentro do período determinado, normalmente cinco (5) dias úteis. A peça com defeito deve ser enviada com a documentação correspondente no material de transporte fornecido. Caso não o faça, a HP poderá cobrar a reposição. Para as peças de reparo feito pelo cliente, a HP paga todas as despesas de transporte e de devolução da peça e determina a transportadora/serviço postal a ser utilizado.

Para obter mais informações sobre o programa de reparo feito pelo cliente da HP, entre em contato com o fornecedor de serviços local. Para o programa norte-americano, visite o site da HP (**http://www.hp.com/go/selfrepair**).

Serviço de garantia apenas para peças

A garantia limitada da HP pode incluir um serviço de garantia apenas para peças. Segundo os termos do serviço de garantia apenas para peças, a HP fornece as peças de reposição sem cobrar nenhuma taxa.

No caso desse serviço, a substituição de peças CSR é obrigatória. Se desejar que a HP substitua essas peças, serão cobradas as despesas de transporte e mão-de-obra do serviço.

顧客自己修理保証サービス

修理時間を短縮し、故障部品の交換における高い柔軟性を確保するために、HP製品には多数の顧客自己修理（CSR）部品があります。診断の際に、CSR部品を使用すれば修理ができるとHP（HPまたはHP正規保守代理店）が判断した場合、HPはその部品を直接、お客様に発送し、お客様に交換していただきます。CSR部品には以下の2通りがあります。

- 必須 - 顧客自己修理が必須の部品。当該部品について、もしもお客様がHPに交換作業を依頼される場合には、その修理サービスに関する交通費および人件費がお客様に請求されます。
- 任意 - 顧客自己修理が任意である部品。この部品も顧客自己修理用です。当該部品について、もしもお客様がHPに交換作業を依頼される場合には、お買い上げの製品に適用される保証サービス内容の範囲内においては、別途費用を負担していただくことなく保証サービスを受けることができます。

注： HP製品の一部の部品は、顧客自己修理用ではありません。製品の保証を継続するためには、HPまたはHP正規保守代理店による交換作業が必須となります。部品カタログには、当該部品が顧客自己修理除外品である旨が記載されています。

部品供給が可能な場合、地域によっては、CSR部品を翌営業日に届くように発送します。また、地域によっては、追加費用を負担いただくことにより同日または4時間以内に届くように発送することも可能な場合があります。サポートが必要なときは、HPの修理受付窓口に電話していただければ、技術者が電話でアドバイスします。交換用のCSR部品または同梱物には、故障部品をHPに返送する必要があるかどうかが表示されています。故障部品をHPに返送する必要がある場合は、指定期限内（通常は5営業日以内）に故障部品をHPに返送してください。故障部品を返送する場合は、届いた時の梱包箱に関連書類とともに入れてください。故障部品を返送しない場合、HPから部品費用が請求されます。顧客自己修理の際には、HPは送料および部品返送費を全額負担し、使用する宅配便会社や運送会社を指定します。

部品のみ保証サービス

HP保証サービスには、部品のみ保証サービスが適用される場合があります。このサービスでは、交換部品は無償で提供されます。

部品のみ保証サービスにおいては、CSR部品をお客様により交換作業していただくことが必須となります。当該部品について、もしもお客様がHPに交換作業を依頼される場合には、その修理サービスに関する交通費および人件費はお客様の負担となります。

客户自行维修

HP 产品提供许多客户自行维修 (CSR) 部件，以尽可能缩短维修时间和在更换缺陷部件方面提供更大的灵活性。如果在诊断期间 HP（或 HP 服务提供商或服务合作伙伴）确定可以通过使用 CSR 部件完成维修，HP 将直接把该部件发送给您进行更换。有两类 CSR 部件：

- **强制性的** — 要求客户必须自行维修的部件。如果您请求 HP 更换这些部件，则必须为该服务支付差旅费和人工费用。
- **可选的** — 客户可以选择是否自行维修的部件。这些部件也是为客户自行维修设计的。不过，如果您要求 HP 为您更换这些部件，则根据为您的产品指定的保修服务类型，HP 可能收取或不再收取任何附加费用。

注：某些 HP 部件的设计并未考虑客户自行维修。为了满足客户保修的需要，HP 要求授权服务提供商更换相关部件。这些部件在部件图解目录中标记为“否”。

CSR 部件将在下一个工作日发运（取决于备货情况和允许的地理范围）。在允许的地理范围内，可在当天或四小时内发运，但要收取额外费用。如果需要帮助，您可以致电 HP 技术支持中心，将会有技术人员通过电话为您提供帮助。HP 会在随更换的 CSR 部件发运的材料中指明是否必须将有缺陷的部件返还给 HP。如果要求您将有缺陷的部件返还给 HP，那么您必须在规定期限内（通常是五 (5) 个工作日）将缺陷部件发给 HP。有缺陷的部件必须随所提供的发运材料中的相关文件一起返还。如果未能送还有缺陷的部件，HP 可能会要求您支付更换费用。客户自行维修时，HP 将承担所有相关运输和部件返回费用，并指定快递商/承运商。

有关 HP 客户自行维修计划的详细信息，请与您当地的服务提供商联系。有关北美地区的计划，请访问 HP 网站 (http://www.hp.com/go/selfrepair)。

仅部件保修服务

您的 HP 有限保修服务可能涉及仅部件保修服务。根据仅部件保修服务条款的规定，HP 将免费提供更换的部件。

仅部件保修服务要求进行 CSR 部件更换。如果您请求 HP 更换这些部件，则必须为该服务支付差旅费和人工费用。

客戶自行維修

HP 產品設計了許多「客戶自行維修」(CSR) 的零件以減少維修時間，並且使得更換瑕疵零件時能有更大的彈性。如果在診斷期間 HP（或 HP 服務供應商或維修夥伴）辨認出此項維修工作可以藉由使用 CSR 零件來完成，則 HP 將直接寄送該零件給您作更換。CSR 零件分為兩種類別：

- **強制的** — 客戶自行維修所使用的零件是強制性的。如果您要求 HP 更換這些零件，HP 將會向您收取此服務所需的外出費用與勞動成本。
- **選購的** — 客戶自行維修所使用的零件是選購的。這些零件也設計用於客戶自行維修之用。不過，如果您要求 HP 為您更換，則可能需要也可能不需要負擔額外的費用，端視針對此產品指定的保固服務類型而定。

備註：某些 HP 零件沒有消費者可自行維修的設計。為符合客戶保固，HP 需要授權的服務供應商更換零件。這些零件在圖示的零件目錄中，被標示為「否」。

基於材料取得及環境允許的情況下，CSR 零件將於下一個工作日以快遞寄送。在環境的允許下當天或四小時內送達，則可能需要額外的費用。若您需要協助，可致電「HP 技術支援中心」，會有一位技術人員透過電話來協助您。不論損壞的零件是否必須退回，HP 皆會在與 CSR 替換零件一起運送的材料中註明。若要將損壞的零件退回 HP，您必須在指定的一段時間內（通常為五 (5) 個工作天），將損壞的零件寄回 HP。損壞的零件必須與寄送資料中隨附的相關技術文件一併退還。如果無法退還損壞的零件，HP 可能要向您收取替換費用。針對客戶自行維修情形，HP 將負責所有運費及零件退還費用並指定使用何家快遞/貨運公司。

如需 HP 的「客戶自行維修」方案詳細資訊，請連絡您當地的服務供應商。至於北美方案，請參閱 HP 網站 (http://www.hp.com/go/selfrepair)。

僅限零件的保固服務

您的「HP 有限保固」可能包含僅限零件的保固服務。在僅限零件的保固服務情況下，HP 將免費提供替換零件。

針對僅限零件的保固服務，CSR 零件替換是強制性的。如果您要求 HP 更換這些零件，HP 將會向您收取此服務所需的外出費用與勞動成本。

고객 셀프 수리

HP 제품은 수리 시간을 최소화하고 결함이 있는 부품 교체 시 더욱 융통성을 발휘할 수 있도록 하기 위해 고객 셀프 수리(CSR) 부품을 다량 사용하여 설계되었습니다. 진단 기간 동안 HP(또는 HP 서비스 공급업체 또는 서비스 협력업체)에서 CSR 부품을 사용하여 수리가 가능하다고 판단되면 HP는 해당 부품을 바로 사용자에게 보내어 사용자가 교체할 수 있도록 합니다. CSR 부품에는 두 가지 종류가 있습니다.

- **고객 셀프 수리가 의무 사항인 필수 부품.** 사용자가 HP에 이 부품의 교체를 요청할 경우 이 서비스에 대한 출장비 및 작업비가 청구됩니다.
- **고객 셀프 수리가 선택 사항인 부품.** 이 부품들도 고객 셀프 수리가 가능하도록 설계되었습니다. 하지만 사용자가 HP에 이 부품의 교체를 요청할 경우 사용자가 구입한 제품에 해당하는 보증 서비스 유형에 따라 추가 비용 없이 교체가 가능할 수 있습니다.

참고: 일부 HP 부품은 고객 셀프 수리가 불가능하도록 설계되었습니다. HP는 만족스러운 고객 보증을 위해 공인 서비스 제공업체를 통해 부품을 교체하도록 하고 있습니다. 이러한 부품들은 Illustrated Parts Catalog에 "No"라고 표시되어 있습니다.

CSR 부품은 재고 상태와 지리적 조건이 허용하는 경우 다음 영업일 납품이 가능하도록 배송이 이루어집니다. 지리적 조건이 허용하는 경우 추가 비용이 청구되는 조건으로 당일 또는 4시간 배송이 가능할 수도 있습니다. 도움이 필요하시면 HP 기술 지원 센터로 전화하십시오. 전문 기술자가 전화로 도움을 줄 것입니다. HP는 결함이 발생한 부품을 HP로 반환해야 하는지 여부를 CSR 교체 부품과 함께 배송된 자료에 지정합니다. 결함이 발생한 부품을 HP로 반환해야 하는 경우에는 지정된 기간 내(통상 영업일 기준 5일)에 HP로 반환해야 합니다. 이 때 결함이 발생한 부품은 제공된 포장 재료에 넣어 관련 설명서와 함께 반환해야 합니다. 결함이 발생한 부품을 반환하지 않는 경우 HP가 교체 부품에 대해 비용을 청구할 수 있습니다. 고객 셀프 수리의 경우, HP는 모든 운송 및 부품 반환 비용을 부담하며 이용할 운송업체 및 택배 서비스를 결정합니다.

HP 고객 셀프 수리 프로그램에 대한 자세한 내용은 가까운 서비스 제공업체에 문의하십시오. 북미 지역의 프로그램에 대해서는 HP 웹 사이트(http://www.hp.com/go/selfrepair)를 참조하십시오.

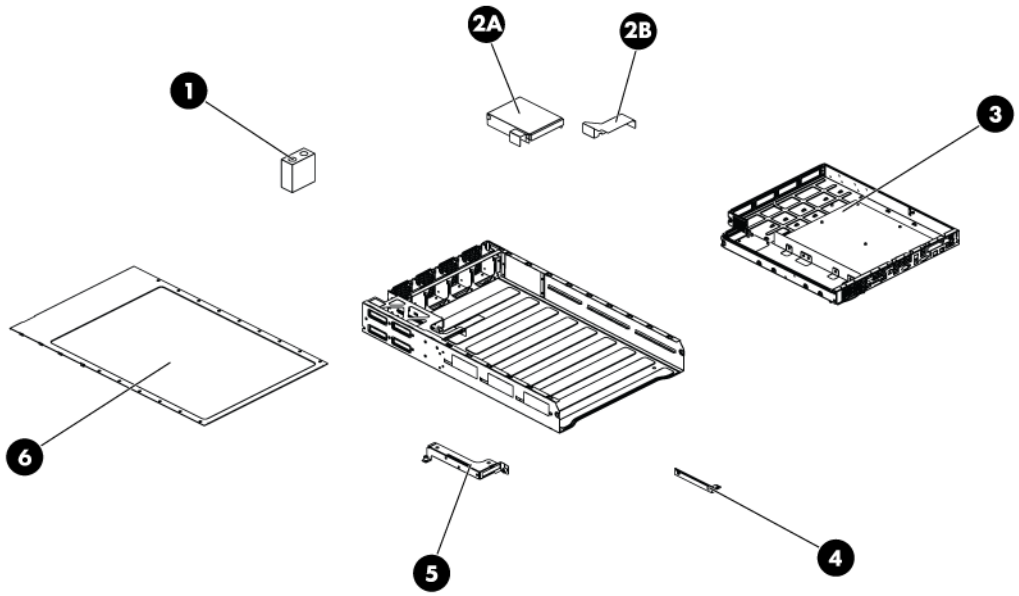
부품 제공 보증 서비스

HP 제한 보증에는 부품 제공 보증 서비스가 포함될 수 있습니다. 이러한 경우 HP는 부품 제공 보증 서비스의 조건에 따라 교체 부품만을 무료로 제공합니다.

부품 제공 보증 서비스 제공 시 CSR 부품 교체는 의무 사항입니다. 사용자가 HP에 이 부품의 교체를 요청할 경우 이 서비스에 대한 출장비 및 작업비가 청구됩니다.

Illustrated parts catalog

Mechanical components



Item	Description	Spare part number	Customer self repair
1	Fan blank		
2A	Air baffle 1	607824-001	Mandatory
2B	Air baffle, DIMM	610857-001	Mandatory
3	1U tray for 165z system		
4	PCIe x16 riser card bracket		
5	PCIe x4 storage card cage		
6	Top cover		

[1]Mandatory—Parts for which customer self repair is mandatory. If you request HP to replace these parts, you will be charged for the travel and labor costs of this service.

[2]Optional—Parts for which customer self repair is optional. These parts are also designed for customer self repair. If, however, you require that HP replace them for you, there may or may not be additional charges, depending on the type of warranty service designated for your product.

[3]No—Some HP parts are not designed for customer self repair. In order to satisfy the customer warranty, HP requires that an authorized service provider replace the part. These parts are identified as "No" in the Illustrated Parts Catalog.

[1]Mandatory: Obligatoire—Pièces pour lesquelles la réparation par le client est obligatoire. Si vous demandez à HP de remplacer ces pièces, les coûts de déplacement et main d'œuvre du service vous seront facturés.

[2]Optional: Facultatif—Pièces pour lesquelles la réparation par le client est facultative. Ces pièces sont également conçues pour permettre au client d'effectuer lui-même la réparation. Toutefois, si vous demandez à HP de remplacer ces pièces, l'intervention peut ou non vous être facturée, selon le type de garantie applicable à votre produit.

[3]No: Non—Certaines pièces HP ne sont pas conçues pour permettre au client d'effectuer lui-même la réparation. Pour que la garantie puisse s'appliquer, HP exige que le remplacement de la pièce soit effectué par un Mainteneur Agréé. Ces pièces sont identifiées par la mention “Non” dans le Catalogue illustré.

[1]Mandatory: Obbligatorie—Parti che devono essere necessariamente riparate dal cliente. Se il cliente ne affida la riparazione ad HP, deve sostenere le spese di spedizione e di manodopera per il servizio.

[2]Optional: Opzionali—Parti la cui riparazione da parte del cliente è facoltativa. Si tratta comunque di componenti progettati per questo scopo. Se tuttavia il cliente ne richiede la sostituzione ad HP, potrebbe dover sostenere spese addizionali a seconda del tipo di garanzia previsto per il prodotto.

[3]No: Non CSR—Alcuni componenti HP non sono progettati per la riparazione da parte del cliente. Per rispettare la garanzia, HP richiede che queste parti siano sostituite da un centro di assistenza autorizzato. Tali parti sono identificate da un “No” nel Catalogo illustrato dei componenti.

[1]Mandatory: Zwingend—Teile, die im Rahmen des Customer Self Repair Programms ersetzt werden müssen. Wenn Sie diese Teile von HP ersetzen lassen, werden Ihnen die Versand- und Arbeitskosten für diesen Service berechnet.

[2]Optional: Optional—Teile, für die das Customer Self Repair-Verfahren optional ist. Diese Teile sind auch für Customer Self Repair ausgelegt. Wenn Sie jedoch den Austausch dieser Teile von HP vornehmen lassen möchten, können bei diesem Service je nach den für Ihr Produkt vorgesehenen Garantiebedingungen zusätzliche Kosten anfallen.

[3]No: Kein—Einige Teile sind nicht für Customer Self Repair ausgelegt. Um den Garantieanspruch des Kunden zu erfüllen, muss das Teil von einem HP Servicepartner ersetzt werden. Im illustrierten Teilekatalog sind diese Teile mit „No“ bzw. „Nein“ gekennzeichnet.

[1]Mandatory: Obligatorio—componentes para los que la reparación por parte del usuario es obligatoria. Si solicita a HP que realice la sustitución de estos componentes, tendrá que hacerse cargo de los gastos de desplazamiento y de mano de obra de dicho servicio.

[2]Optional: Opcional— componentes para los que la reparación por parte del usuario es opcional. Estos componentes también están diseñados para que puedan ser reparados por el usuario. Sin embargo, si precisa que HP realice su sustitución, puede o no conllevar costes adicionales, dependiendo del tipo de servicio de garantía correspondiente al producto.

[3]No: No—Algunos componentes no están diseñados para que puedan ser reparados por el usuario. Para que el usuario haga valer su garantía, HP pone como condición que un proveedor de servicios autorizado realice la sustitución de estos componentes. Dichos componentes se identifican con la palabra “No” en el catálogo ilustrado de componentes.

[1]Mandatory: Verplicht—Onderdelen waarvoor Customer Self Repair verplicht is. Als u HP verzoekt deze onderdelen te vervangen, komen de reiskosten en het arbeidsloon voor uw rekening.

[2]Optional: Optioneel—Onderdelen waarvoor reparatie door de klant optioneel is. Ook deze onderdelen zijn ontworpen voor reparatie door de klant. Als u echter HP verzoekt deze onderdelen voor u te vervangen, kunnen daarvoor extra kosten in rekening worden gebracht, afhankelijk van het type garantieservice voor het product.

[3]No: Nee—Sommige HP onderdelen zijn niet ontwikkeld voor reparatie door de klant. In verband met de garantievoorwaarden moet het onderdeel door een geautoriseerde Service Partner worden vervangen. Deze onderdelen worden in de geïllustreerde onderdelencatalogus aangemerkt met "Nee".

[1]Mandatory: Obrigatória—Peças cujo reparo feito pelo cliente é obrigatório. Se desejar que a HP substitua essas peças, serão cobradas as despesas de transporte e mão-de-obra do serviço.

[2]Optional: Opcional—Peças cujo reparo feito pelo cliente é opcional. Essas peças também são projetadas para o reparo feito pelo cliente. No entanto, se desejar que a HP as substitua, pode haver ou não a cobrança de taxa adicional, dependendo do tipo de serviço de garantia destinado ao produto.

[3]No: Nenhuma—Algumas peças da HP não são projetadas para o reparo feito pelo cliente. A fim de cumprir a garantia do cliente, a HP exige que um técnico autorizado substitua a peça. Essas peças estão identificadas com a marca “No” (Não), no catálogo de peças ilustrado.

[1]Mandatory：必須 - 顧客自己修理が必須の部品。当該部品について、もしもお客様がHPに交換作業を依頼される場合には、その修理サービスに関する交通費および人件費がお客様に請求されます。

[2]Optional：任意 - 顧客自己修理が任意である部品。この部品も顧客自己修理用です。当該部品について、もしもお客様がHPに交換作業を依頼される場合には、お買い上げの製品に適用される保証サービス内容の範囲内においては、費用を負担していただくことなく保証サービスを受けることができます。

[3]No：除外 - HP製品の一部の部品は、顧客自己修理用ではありません。製品の保証を継続するためには、HPまたはHP正規保守代理店による交換作業が必須となります。部品カタログには、当該部品が顧客自己修理除外品である旨が記載されています。

[1]Mandatory: 强制性的 — 要求客户必须自行维修的部件。如果您请求 HP 更换这些部件，则必须为该服务支付差旅费和人工费用。

[2]Optional: 可选的 — 客户可以选择是否自行维修的部件。这些部件也是为客户自行维修设计的。不过，如果您要求 HP 为您更换这些部件，则根据为您的产品指定的保修服务类型，HP 可能收取或不再收取任何附加费用。

[3]No: 否 — 某些 HP 部件的设计并未考虑客户自行维修。为了满足客户保修的需要，HP 要求授权服务提供商更换相关部件。这些部件在部件图解目录中标记为“否”。

[1]Mandatory: 強制的 — 客戶自行維修所使用的零件是強制性的。如果您要求 HP 更換這些零件，HP 將會向您收取此服務所需的外出費用與勞動成本。

[2]Optional: 選購的 — 客戶自行維修所使用的零件是選購的。這些零件也設計用於客戶自行維修之用。不過，如果您要求 HP 為您更換，則可能需要也可能不需要負擔額外的費用，端視針對此產品指定的保固服務類型而定。

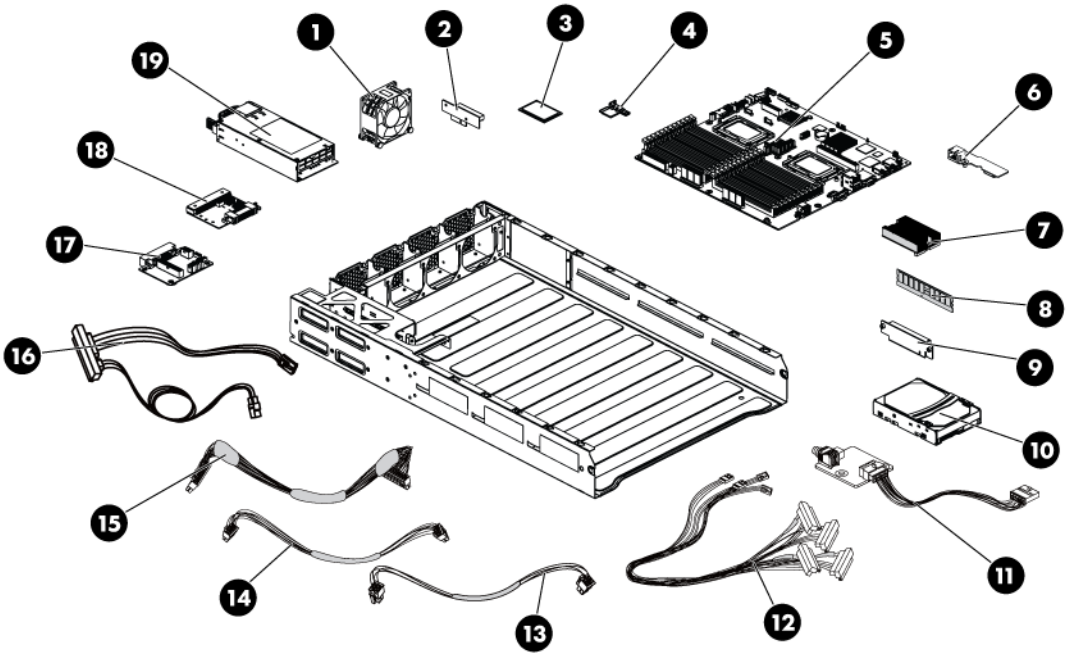
[3]No: 否 — 某些 HP 零件沒有消費者可自行維修的設計。為符合客戶保固，HP 需要授權的服務供應商更換零件。這些零件在圖示的零件目錄中，被標示為「否」。

[1] Mandatory: 필수 — 고객 셀프 수리가 의무 사항인 필수 부품. 사용자가 HP에 이 부품의 교체를 요청할 경우 이 서비스에 대한 출장비 및 작업비가 청구됩니다.

[2] Optional: 옵션 — 고객 셀프 수리가 선택 사항인 부품. 이 부품들도 고객 셀프 수리가 가능하도록 설계되었습니다. 하지만 사용자가 HP에 이 부품의 교체를 요청할 경우 사용자가 구입한 제품에 해당하는 보증 서비스 유형에 따라 추가 비용 없이 교체가 가능할 수 있습니다.

[3] No: No — 고객 셀프 수리가 불가능하도록 설계된 HP 부품. 이 부품들은 고객 셀프 수리가 불가능하도록 설계되었습니다. HP는 고객 보증을 만족시키기 위해 공인 서비스 제공업체를 통해 부품을 교체하도록 하고 있습니다.

System components



Item	Description	Spare Part Number	Customer Self Repair
1	System fan	576898-001	Mandatory
2	PCIe x4 riser card		
3	Processors, OpteronAMD Opteron		
	AMD Opteron 6164HE 12c 1.7 Ghz	598730-001	Optional
	AMD Opteron 6124HE 8c 1.8Ghz 55W	602104-001	Optional
	AMD Opteron 6168 12c 1.9 Ghz 75W	602108-001	Optional
	AMD Opteron 6128HE 8c 2.0Ghz 55W	583751-001	Optional
	AMD Opteron 6136 8c 2.4 Ghz 75W	583753-001	Optional
	AMD Opteron 6172 12c 2.1 Ghz 75W	583755-001	Optional
	AMD Opteron 6134 8c 2.3 Ghz 75W	583752-001	Optional
	AMD Opteron 6176SE 12c 2.3 Ghz	599220-001	Optional
	AMD Opteron 6174 12c 2.2 Ghz	598729-001	Optional
	AMD Opteron 6128 8c 2.0 Ghz 75W	598732-001	Optional
4	Card reader board (Optional)	586010-001	Optional
5	System board	603887-001	Optional
6	Management controller board (Optional)	516806-001	Optional
7	Processor heat sink	603888-001	Optional
8	Memory modules		

Item	Description	Spare Part Number	Customer Self Repair
	DIMM,2GB PC3-10600R,128Mx8,RoHS	595094-001	Mandatory
	DIMM,4GB PC3-10600R,256Mx4,RoHS	595095-001	Mandatory
	DIMM,4GB PC3-10600R,512Mx4,RoHS	595096-001	Mandatory
	DIMM,8GB PC3-10600R,512Mx4,RoHS	595097-001	Mandatory
	DIMM,16GB PC3-8500R,512Mx4,RoHS	595098-001	Mandatory
	DIMM,4GB PC3L-8500R,256Mx8,RoHS	595099-001	Mandatory
	DIMM,8GB PC3L-8500R,512Mx4,RoHS	595100-001	Mandatory
	DIMM,2GB PC3-10600E,128Mx8,RoHS	595101-001	Mandatory
	DIMM,4GB PC3-10600E,256Mx8,RoHS	595102-001	Mandatory
9	PCIe x16 riser card	536654-001	Optional
10	SAS/SATA hard drives		
11	Control panel w/cables	607820-001	Optional
12	Cable, SAS data	576897-001	Optional
13	Cable, redundant power supply	607822-001	Optional
14	Cable kit, SATA power	576893-001	Optional
15	Cable, power converter	607821-001	Optional
16	Cable kit, SATA HD	576895-001	Optional
17	Power board	576882-001	Optional
18	Personality board	607823-001	Optional
19	750 W power supply 1200 W Power supply	511778-001 498152-001	Mandatory

[1]Mandatory—Parts for which customer self repair is mandatory. If you request HP to replace these parts, you will be charged for the travel and labor costs of this service.

[2]Optional—Parts for which customer self repair is optional. These parts are also designed for customer self repair. If, however, you require that HP replace them for you, there may or may not be additional charges, depending on the type of warranty service designated for your product.

[3]No—Some HP parts are not designed for customer self repair. In order to satisfy the customer warranty, HP requires that an authorized service provider replace the part. These parts are identified as "No" in the Illustrated Parts Catalog.

[1]Mandatory: Obligatoire—Pièces pour lesquelles la réparation par le client est obligatoire. Si vous demandez à HP de remplacer ces pièces, les coûts de déplacement et main d'œuvre du service vous seront facturés.

[2]Optional: Facultatif—Pièces pour lesquelles la réparation par le client est facultative. Ces pièces sont également conçues pour permettre au client d'effectuer lui-même la réparation. Toutefois, si vous demandez à HP de remplacer ces pièces, l'intervention peut ou non vous être facturée, selon le type de garantie applicable à votre produit.

[3]No: Non—Certaines pièces HP ne sont pas conçues pour permettre au client d'effectuer lui-même la réparation. Pour que la garantie puisse s'appliquer, HP exige que le remplacement de la pièce soit effectué par un Mainteneur Agréé. Ces pièces sont identifiées par la mention “Non” dans le Catalogue illustré.

[1]Mandatory: Obbligatorie—Parti che devono essere necessariamente riparate dal cliente. Se il cliente ne affida la riparazione ad HP, deve sostenere le spese di spedizione e di manodopera per il servizio.

[2]Optional: Opzionali—Parti la cui riparazione da parte del cliente è facoltativa. Si tratta comunque di componenti progettati per questo scopo. Se tuttavia il cliente ne richiede la sostituzione ad HP, potrebbe dover sostenere spese addizionali a seconda del tipo di garanzia previsto per il prodotto.

[3]No: Non CSR—Alcuni componenti HP non sono progettati per la riparazione da parte del cliente. Per rispettare la garanzia, HP richiede che queste parti siano sostituite da un centro di assistenza autorizzato. Tali parti sono identificate da un “No” nel Catalogo illustrato dei componenti.

[1]Mandatory: Zwingend—Teile, die im Rahmen des Customer Self Repair Programms ersetzt werden müssen. Wenn Sie diese Teile von HP ersetzen lassen, werden Ihnen die Versand- und Arbeitskosten für diesen Service berechnet.

[2]Optional: Optional—Teile, für die das Customer Self Repair-Verfahren optional ist. Diese Teile sind auch für Customer Self Repair ausgelegt. Wenn Sie jedoch den Austausch dieser Teile von HP vornehmen lassen möchten, können bei diesem Service je nach den für Ihr Produkt vorgesehenen Garantiebedingungen zusätzliche Kosten anfallen.

[3]No: Kein—Einige Teile sind nicht für Customer Self Repair ausgelegt. Um den Garantieanspruch des Kunden zu erfüllen, muss das Teil von einem HP Servicepartner ersetzt werden. Im illustrierten Teilekatalog sind diese Teile mit „No“ bzw. „Nein“ gekennzeichnet.

[1]Mandatory: Obligatorio—componentes para los que la reparación por parte del usuario es obligatoria. Si solicita a HP que realice la sustitución de estos componentes, tendrá que hacerse cargo de los gastos de desplazamiento y de mano de obra de dicho servicio.

[2]Optional: Opcional— componentes para los que la reparación por parte del usuario es opcional. Estos componentes también están diseñados para que puedan ser reparados por el usuario. Sin embargo, si precisa que HP realice su sustitución, puede o no conllevar costes adicionales, dependiendo del tipo de servicio de garantía correspondiente al producto.

[3]No: No—Algunos componentes no están diseñados para que puedan ser reparados por el usuario. Para que el usuario haga valer su garantía, HP pone como condición que un proveedor de servicios autorizado realice la sustitución de estos componentes. Dichos componentes se identifican con la palabra “No” en el catálogo ilustrado de componentes.

[1]Mandatory: Verplicht—Onderdelen waarvoor Customer Self Repair verplicht is. Als u HP verzoekt deze onderdelen te vervangen, komen de reiskosten en het arbeidsloon voor uw rekening.

[2]Optional: Optioneel—Onderdelen waarvoor reparatie door de klant optioneel is. Ook deze onderdelen zijn ontworpen voor reparatie door de klant. Als u echter HP verzoekt deze onderdelen voor u te vervangen, kunnen daarvoor extra kosten in rekening worden gebracht, afhankelijk van het type garantieservice voor het product.

[3]No: Nee—Sommige HP onderdelen zijn niet ontwikkeld voor reparatie door de klant. In verband met de garantievoorwaarden moet het onderdeel door een geautoriseerde Service Partner worden vervangen. Deze onderdelen worden in de geïllustreerde onderdelencatalogus aangemerkt met "Nee".

[1]Mandatory: Obrigatória—Peças cujo reparo feito pelo cliente é obrigatório. Se desejar que a HP substitua essas peças, serão cobradas as despesas de transporte e mão-de-obra do serviço.

[2]Optional: Opcional—Peças cujo reparo feito pelo cliente é opcional. Essas peças também são projetadas para o reparo feito pelo cliente. No entanto, se desejar que a HP as substitua, pode haver ou não a cobrança de taxa adicional, dependendo do tipo de serviço de garantia destinado ao produto.

[3]No: Nenhuma—Algumas peças da HP não são projetadas para o reparo feito pelo cliente. A fim de cumprir a garantia do cliente, a HP exige que um técnico autorizado substitua a peça. Essas peças estão identificadas com a marca “No” (Não), no catálogo de peças ilustrado.

[1]Mandatory：必須 - 顧客自己修理が必須の部品。当該部品について、もしもお客様がHPに交換作業を依頼される場合には、その修理サービスに関する交通費および人件費がお客様に請求されます。

[2]Optional：任意 - 顧客自己修理が任意である部品。この部品も顧客自己修理用です。当該部品について、もしもお客様がHPに交換作業を依頼される場合には、お買い上げの製品に適用される保証サービス内容の範囲内においては、費用を負担していただくことなく保証サービスを受けることができます。

[3]No：除外 - HP製品の一部の部品は、顧客自己修理用ではありません。製品の保証を継続するためには、HPまたはHP正規保守代理店による交換作業が必須となります。部品カタログには、当該部品が顧客自己修理除外品である旨が記載されています。

[1]Mandatory: 强制性的 — 要求客户必须自行维修的部件。如果您请求 HP 更换这些部件，则必须为该服务支付差旅费和人工费用。

[2]Optional: 可选的 — 客户可以选择是否自行维修的部件。这些部件也是为客户自行维修设计的。不过，如果您要求 HP 为您更换这些部件，则根据为您的产品指定的保修服务类型，HP 可能收取或不再收取任何附加费用。

[3]No: 否 — 某些 HP 部件的设计并未考虑客户自行维修。为了满足客户保修的需要，HP 要求授权服务提供商更换相关部件。这些部件在部件图解目录中标记为“否”。

[1]Mandatory: 強制的 — 客戶自行維修所使用的零件是強制性的。如果您要求 HP 更換這些零件，HP 將會向您收取此服務所需的外出費用與勞動成本。

[2]Optional: 選購的 — 客戶自行維修所使用的零件是選購的。這些零件也設計用於客戶自行維修之用。不過，如果您要求 HP 為您更換，則可能需要也可能不需要負擔額外的費用，端視針對此產品指定的保固服務類型而定。

[3]No: 否 — 某些 HP 零件沒有消費者可自行維修的設計。為符合客戶保固，HP 需要授權的服務供應商更換零件。這些零件在圖示的零件目錄中，被標示為「否」。

[1] Mandatory: 필수 — 고객 셀프 수리가 의무 사항인 필수 부품. 사용자가 HP에 이 부품의 교체를 요청할 경우 이 서비스에 대한 출장비 및 작업비가 청구됩니다.

[2] Optional: 옵션 — 고객 셀프 수리가 선택 사항인 부품. 이 부품들도 고객 셀프 수리가 가능하도록 설계되었습니다. 하지만 사용자가 HP에 이 부품의 교체를 요청할 경우 사용자가 구입한 제품에 해당하는 보증 서비스 유형에 따라 추가 비용 없이 교체가 가능할 수 있습니다.

[3] No: No — 고객 셀프 수리가 불가능하도록 설계된 HP 부품. 이 부품들은 고객 셀프 수리가 불가능하도록 설계되었습니다. HP는 고객 보증을 만족시키기 위해 공인 서비스 제공업체를 통해 부품을 교체하도록 하고 있습니다.

HP contact information

For the name of the nearest HP authorized reseller:

- In the United States, call 1-800-345-1518.
- In Canada, call 1-800-263-5868.
- In other locations, refer to the HP website at **http://www.hp.com/**.

For HP technical support:

- In North America:
  - Call 1-800-HP-INVENT (1-800-474-6836). This service is available 24 hours a day, 7 days a week. For continuous quality improvement, calls may be recorded or monitored.
  - If you have purchased a Care Pack (service upgrade), call 1-800-633-3600. For more information about Care Packs, refer to the HP website at **http://www.hp.com/**.
- Outside North America, call the nearest HP Technical Support Phone Center. For telephone numbers for worldwide Technical Support Centers, refer to the HP website at **http://www.hp.com/**.

Before you contact HP

Be sure to have the following information available before you call HP:

- Technical support registration number (if applicable)
- Product serial number
- Product model name and number
- Applicable error messages
- Add-on boards or hardware
- Third-party hardware or software
- Operating system type and revision level

Removal and replacement procedures

This chapter provides subassembly/module-level removal and replacement procedures for the HP ProLiant SL165z G7 server.

Review the specifications of a new component before installing it to make sure it is compatible with the server. When you integrate new components into the system, record its model and serial number, and any other pertinent information for future reference. After completing any removal or replacement procedure, run the diagnostics program to verify that all components operate properly.

NOTE: The figures used in this chapter to illustrate procedural steps are labeled numerically (i.e., 1, 2…). When these figures are used in substep items, the alphabetically labeled instructions correspond to the numbered labels on the related figure (i.e., label 1 corresponds to step a, label 2 corresponds to step b, etc.). The procedures described in this section assume that the server is out of the rack and is positioned on a flat, stable surface.

Hardware configuration tools

The following references and software tools may also be used:

- HP ProLiant SL165z G7 Server Support CD
- IPMI Event Log
- Diagnostics Software

Hardware configuration information

Electrostatic discharge information

An electrostatic discharge (ESD) can damage static-sensitive devices or microcircuit. Proper packaging and grounding techniques are necessary precautions to prevent damage. To prevent electrostatic damage, observe the following precautions:

- Transport products in static-safe containers such as conductive tubes, bags, or boxes.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free stations.
- Cover workstations with approved static-dissipating material. Use a wrist strap connected to the work surface, and properly grounded (earthed) tools and equipment.
- Keep work area free of nonconductive materials, such as ordinary plastic assembly aids and foam packing.
- Make sure that you are always properly grounded (earthed) when touching a static-sensitive component or assembly.
- Avoid touching pins, leads, or circuitry.
- Always place drives with the Printed Circuit Board (PCB) assembly-side down.
- Use conductive field service tools.

Pre-installation procedure

Perform the steps below before you open the server or before you remove or replace any component.

WARNING: Failure to properly turn off the server before you open the server or before your start installing/ removing components may cause serious damage as well as bodily harm.

1. Turn off the server and all the peripherals connected to it.
2. Unplug all cables from the power outlets to avoid exposure to high energy levels that may cause burns when parts are short-circuited by metal objects such as tools or jewelry.

   If necessary, label each one to expedite reassembly.
3. Disconnect telecommunication cables to avoid exposure to shock hazard from ringing voltages.
4. If server is installed in a rack, remove server and place it on a flat surface.
5. Remove the top cover according to the instructions described in the section System cover in this chapter.
6. Follow the ESD precautions listed previously in this chapter when handling a server component.

IMPORTANT: To streamline the configuration process, read through the entire installation/removal procedure first and make sure you understand them before you begin.

Post-installation instructions

Observe the following items after installing or removing a server component:

1. Be sure all components are installed according to the described step-by-step instructions.
2. Reinstall the rear cage, air baffle, peripherals, and system cables that you have removed.
3. Reinstall the top cover.
4. Reinstall server into rack.
5. Connect all external cables and the AC power cord to the system.
6. Press the power button on the front panel to turn on the server.

Server warnings and cautions

Before installing a server, be sure that you understand the following warnings and cautions.

WARNING: To reduce the risk of electric shock or damage to the equipment:

- Do not disable the power cord grounding plug. The grounding plug is an important safety feature.
- Plug the power cord into a grounded (earthed) electrical outlet that is easily accessible at all times.
- Unplug the power cord from the power supply to disconnect power to the equipment.
- Do not route the power cord where it can be walked on or pinched by items placed against it. Pay particular attention to the plug, electrical outlet, and the point where the cord extends from the server.

WARNING: To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

CAUTION: Do not operate the server for long periods with the access panel open or removed. Operating the server in this manner results in improper airflow and improper cooling that can lead to thermal damage.

CAUTION: The following rack-mount instructions shall be paid attention to.

- Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.
- Reduced Air Flow - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.
- Mechanical Loading - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
- Circuit Overloading - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
- Reliable Earthing - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips)."

Symbols on equipment

The following symbols may be placed on equipment to indicate the presence of potentially hazardous conditions.

This symbol indicates the presence of hazardous energy circuits or electric shock hazards. Refer all servicing to qualified personnel.

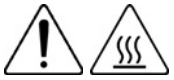
WARNING: To reduce the risk of injury from electric shock hazards, do not open this enclosure. Refer all maintenance, upgrades, and servicing to qualified personnel.

This symbol indicates the presence of electric shock hazards. The area contains no user or field serviceable parts. Do not open for any reason.

WARNING: To reduce the risk of injury from electric shock hazards, do not open this enclosure.

This symbol on an RJ-45 receptacle indicates a network interface connection.

WARNING: To reduce the risk of electric shock, fire, or damage to the equipment, do not plug telephone or telecommunications connectors into this receptacle.



This symbol indicates the presence of a hot surface or hot component. If this surface is contacted, the potential for injury exists.

WARNING: To reduce the risk of injury from a hot component, allow the surface to cool before touching.

weight1_kg
weight1_lb

This symbol indicates that the component exceeds the recommended weight for one individual to handle safely.

WARNING: To reduce the risk of personal injury or damage to the equipment, observe local occupational health and safety requirements and guidelines for manual material handling.

These symbols, on power supplies or systems, indicate that the equipment is supplied by multiple sources of power.

WARNING: To reduce the risk of injury from electric shock, remove all power cords to completely disconnect power from the system.

Powering down the server

The server does not completely power down when the power button on the front panel is pressed. The button toggles between On and Standby. The standby position removes power from most electronics and the drives, but some internal circuitry remains active. To completely remove all power from the system, disconnect all power cords from the server.

To power down the server:

1. Shut down server as directed by the operating system documentation.
2. Press the power button to toggle to Standby.

   This places the server in standby mode changing the power LED indicator to amber. In this mode, the main power supply output is disabled. Standby does not completely disable or remove power from the system.
3. Disconnect the AC power cord from the AC outlet and then from the server.
4. Be sure that the power LED indicator is turned off and that the fan noise has stopped.
5. Disconnect all external peripheral devices from the server.

System cover

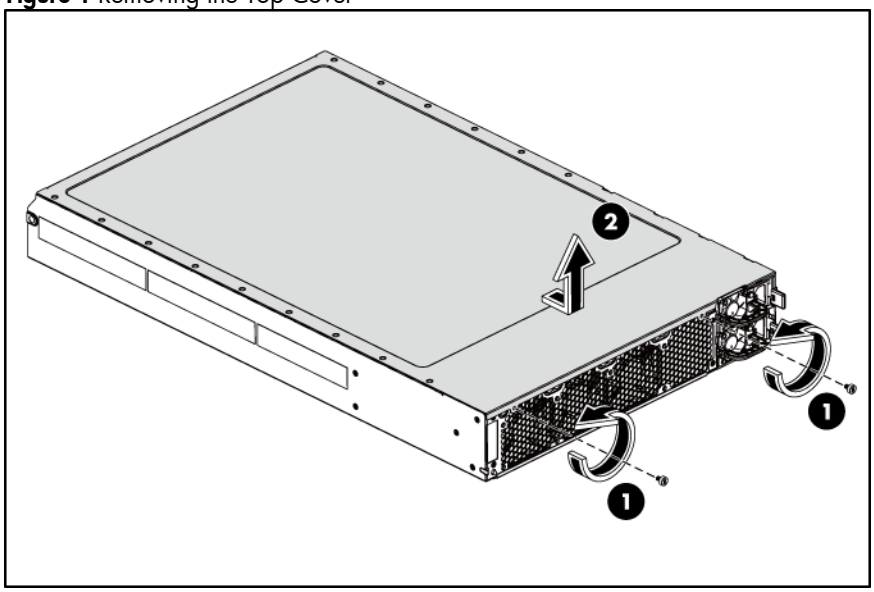
The top cover is detachable for system fans and power board maintenance. If you need to repair or replace a server component, it's unnecessary to remove the top cover.

Top cover

To remove the top cover:

1. Loosen the screws securing the top cover to the chassis.
2. Slide the top cover toward the rear of the chassis and then lift the top cover to remove it from the chassis.

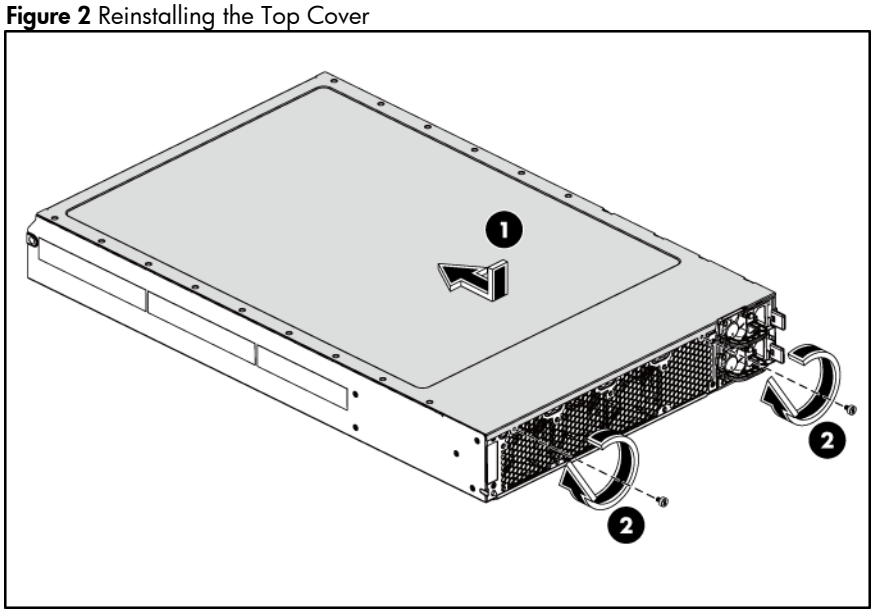
Figure 1 Removing the Top Cover



To reinstall the top cover:

1. Align the top cover to the chassis and then slide it towards the front panel to position it into place.
2. Once the top cover is attached to the chassis, tighten the two rear screws to secure the top cover to the chassis.

Figure 2 Reinstalling the Top Cover



Cable management

Always follow good cable management practices when working inside the computer.

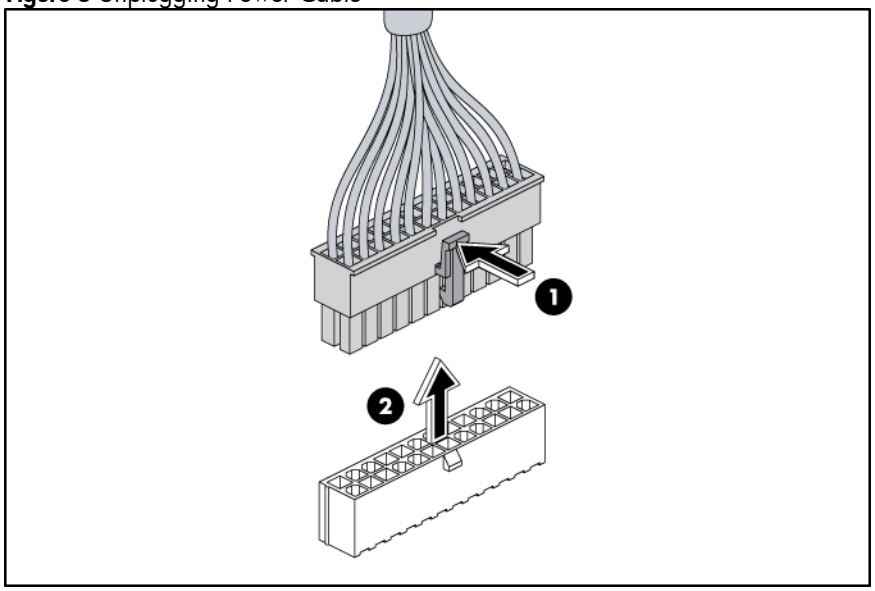
- Keep cables away from major heat sources like the heat sink.
- Do not jam cables on top of expansion cards or memory modules. Printed circuit cards are not designed to withstand excessive pressure.
- Keep cables clear of sliding or moveable parts to prevent cutting or crimping.
- When folding a flat ribbon cable, never fold to a sharp crease. Sharp creases may damage the wires.
- Some flat ribbon cables come pre-folded. Never change the folds on these cables.
- Do not sharply bend any cable. A sharp bend can break the internal wires.
- Never bend a SATA data cable tighter than a 30 mm (1.18 in) radius.
- Never crease a SATA data cable.
- Do not rely on components like the drive cage, power supply, or system cover to push cables down into the chassis.

Removing power supply cables from the system board connectors (J52, J53 and J54) follow below steps:

1. Squeeze on the top of the retaining latch attached to the cable end of the connector.
2. Grasp the cable end of the connector and pull it straight up.

△ **CAUTION:** Always pull the connector - NEVER pull on the cable. Pulling on the cable could damage the cable and result in a failed power supply.

Figure 3 Unplugging Power Cable



Cable connections

The following table provides information about personality board cable connector labels.

Table 1 Cable Connections from the Personality Board

Cable	To	Cable Designator
6-pin system fan connector 1	System fan 1	J6
6-pin system fan connector 2	System fan 2	J8
6-pin system fan connector 3	System fan 3	J10
6-pin system fan connector 4	System fan 4	J11

The following table provides information about power board cable connector labels.

Table 2 Cable Connections from the Power Board

Cable	To	Cable Designator
Switching power board	System board 24-pin power connector	J8
Switching power board	System board 8-pin power connector	J6
Switching power board	System board 4-pin power connector	J9
Switching power board	System board front panel connector	J5
Switching power board	System board power backplane control connector	J7
Switching power board	Power connector on the HDD	J4
Switching power board	Power connector on the HDD	J2

The following table provides the system board designators that various cables plug into. For more detailed information about system board components, see System board components.

Table 3 Cable Connections from the System Board

Cable	To	System board designator
20-pin front panel connector	Front panel connector on the power board	J98
Front panel USB 2.0 port	Front panel USB 2.0	J8
Internal USB 2.0 port	Internal USB 2.0	J49
SD card USB 2.0 port	SD reader module	J81
16-pin power backplane control connector	16-pin power connector on the power board	J55
24-pin power connector	Power board	J52
8-pin power connector	Power board	J53

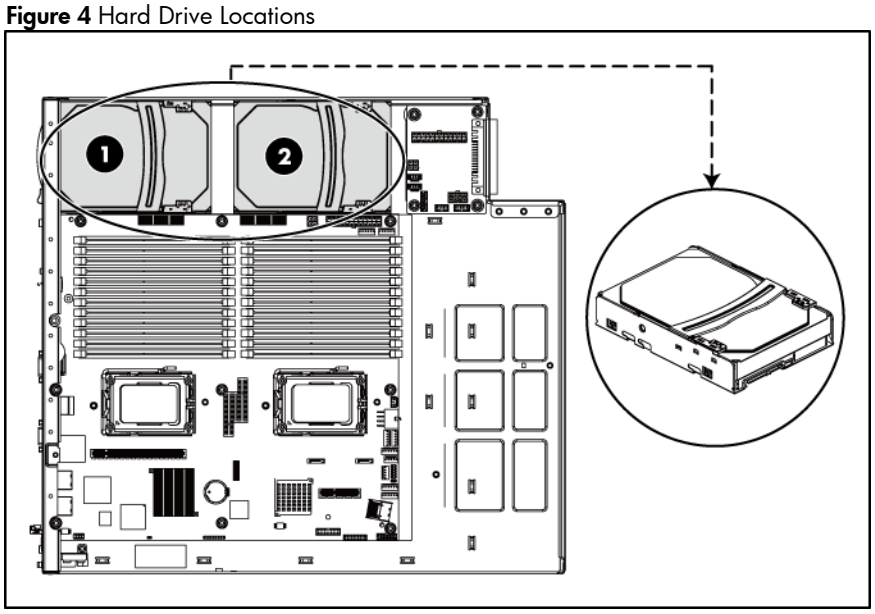
Table 3 Cable Connections from the System Board

Cable	To	System board designator
4-pin power connector	Power board	J54
ODD 1	HDD 1	J23
ODD 2	HDD 2	J20

Hard drives

One server tray can accommodate two 3.5 in. or four 2.5 in. hard drives, and the chassis can accommodate two server trays for up to four 3.5 in. or eight 2.5 in. hard drives. The server supports both SAS and SATA hard drives.

Figure 4 Hard Drive Locations

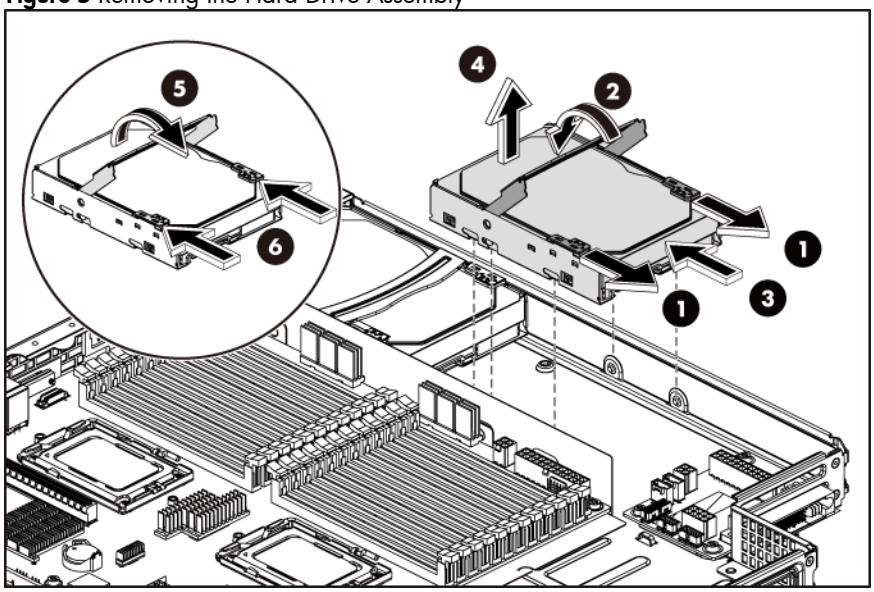


Item	Description
1	1st SAS/SATA hard drive
2	2nd SAS/SATA hard drive

To remove hard drive:

1. Unlock the HDD carrier latches.
2. Rotate the HDD handle up.
3. Push the HDD back and then lift it out of the HDD cage.
4. Rotate the HDD carrier handle down and then lock the HDD carrier latches.

Figure 5 Removing the Hard Drive Assembly

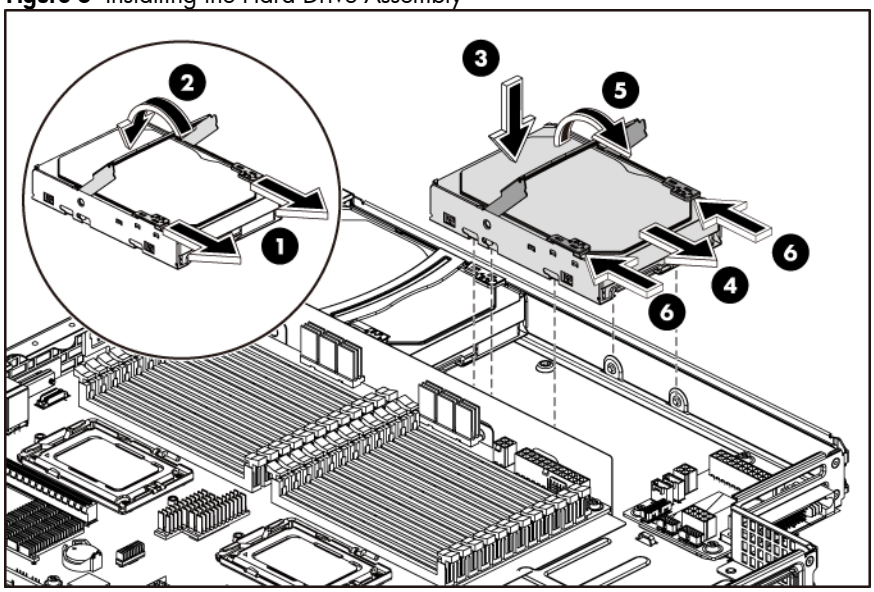


WARNING: Ensure that the system is powered off and all power sources have been disconnected from the server. Voltages are present at various locations within the server whenever an AC power source is connected. This voltage is present even when the main power switch is in the off position.

To install the hard drive:

1. Unlock the HDD carrier latches.
2. Rotate the HDD carrier handle up.
3. Align the five pins on the HDD carrier to their holes on the two sides of the HDD cage, and insert the HDD into the HDD cage.
4. Push the HDD along the direction of the arrow to lock the five pins.
5. Rotate the HDD carrier handle down.
6. Lock the HDD carrier latches.

Figure 6 Installing the Hard Drive Assembly



System board configuration

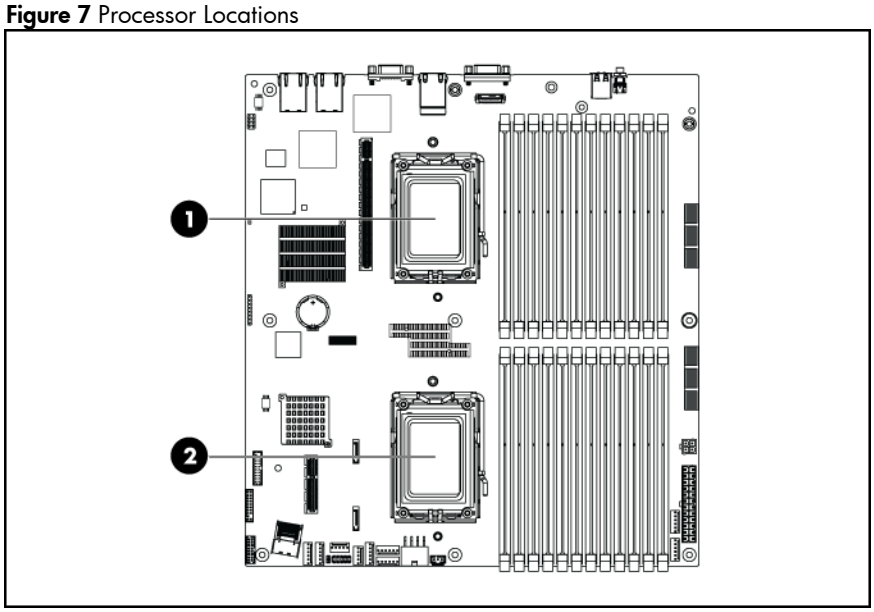
Processor

HP ProLiant SL165z G7 Server supports AMD 8-core/12-core G34-Opteron processors. If a single processor is installed, then use socket 1. When two processors are used, the server supports boot functions through the processor installed in socket 1. However, if processor 1 fails, the system cannot boot up, and if processor 2 fails, the system will be automatically booted from processor 1 and provide a processor failure message.

The processor socket supports 2P AMD G34-Opteron processor with integrated memory controller.

△ **CAUTION:** It is recommended to use processors of same speeds or cache sizes to prevent possible server malfunction.

Figure 7 Processor Locations



Item	Description
1	Processor 1
2	Processor 2

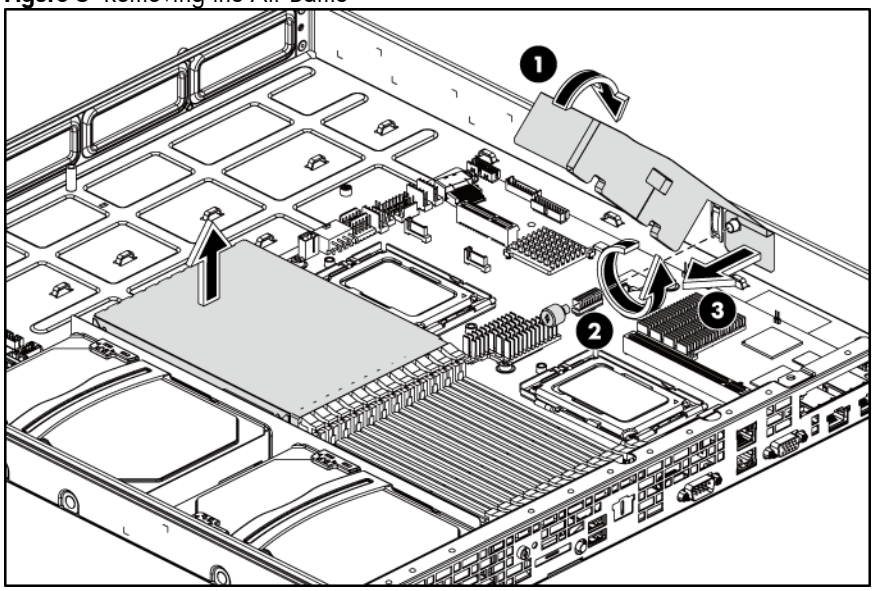
⚠ **WARNING:** To reduce the risk of personal injury from hot surfaces, allow the heat sink and the processor to cool before touching them.

NOTE: Before installing the processor, remove the air baffle.

To remove the air baffle:

1. Gently rock the air baffle 1 up, and then take it out from the system board.
2. Lift one side of the air baffle 2 up, loosen the screw that secures it to the side of the chassis, and then take it out from the system board.

Figure 8 Removing the Air Baffle

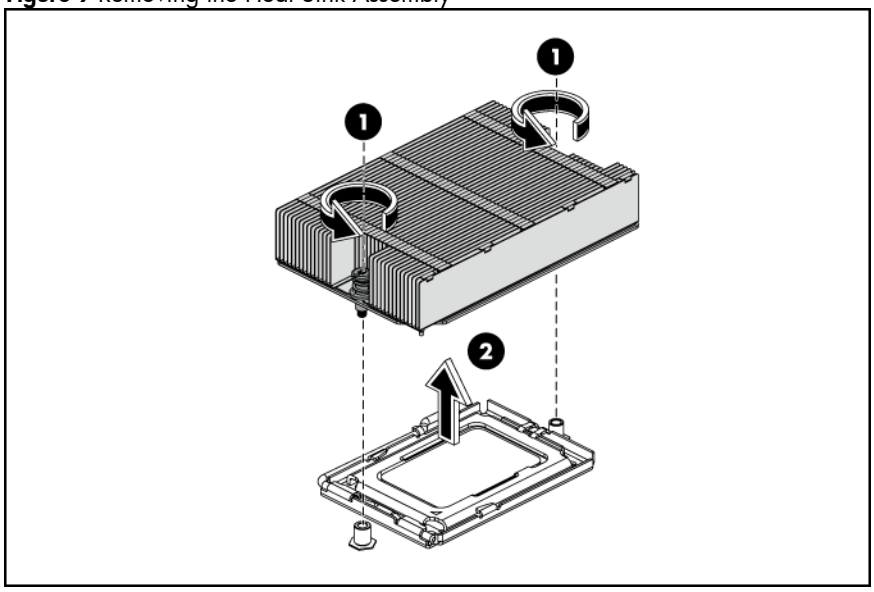


To remove the heat sink:

1. Loosen the two spring-loaded screws.
2. Lift the heat sink away from the system board.

CAUTION: Place heat sink down in an upright position with the thermal patch facing upward. Do not let the thermal patch touch the work surface.

Figure 9 Removing the Heat Sink Assembly



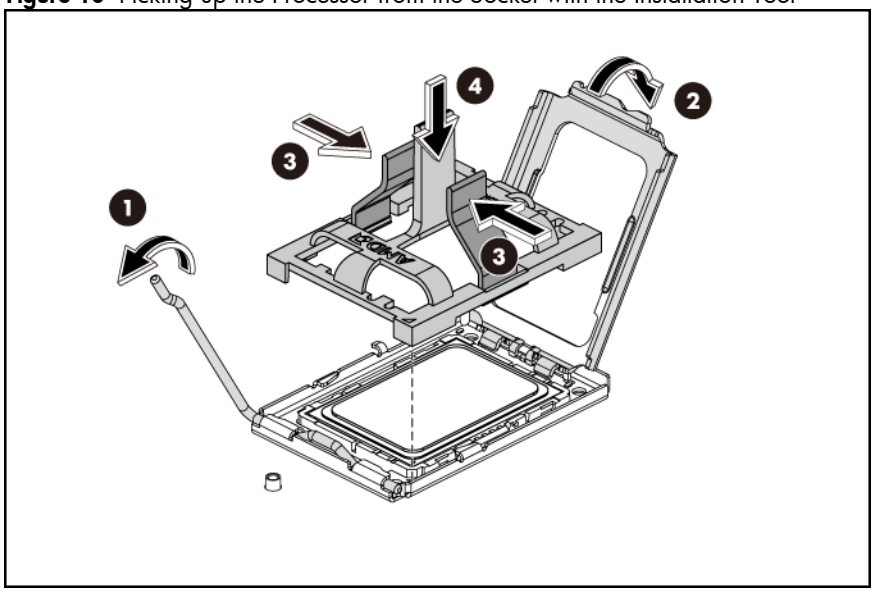
IMPORTANT: If the heat sink has been removed for any reason on a previously installed processor, it is critical that you clean the surface that contacts the processor with alcohol and apply more thermal interface material to the integrated heat spreader on the processor to ensure proper thermal bonding between the processor and the heat sink.

CAUTION: Do not over-tighten the spring-loaded screws to prevent them from breaking off. A maximum torque of 7 inch-lb is set for each screw. Rotate the heat sink a few degrees to the left and right to break the bonding of the thermal grease compound before removing the heat sink from the processor.

To remove a processor:

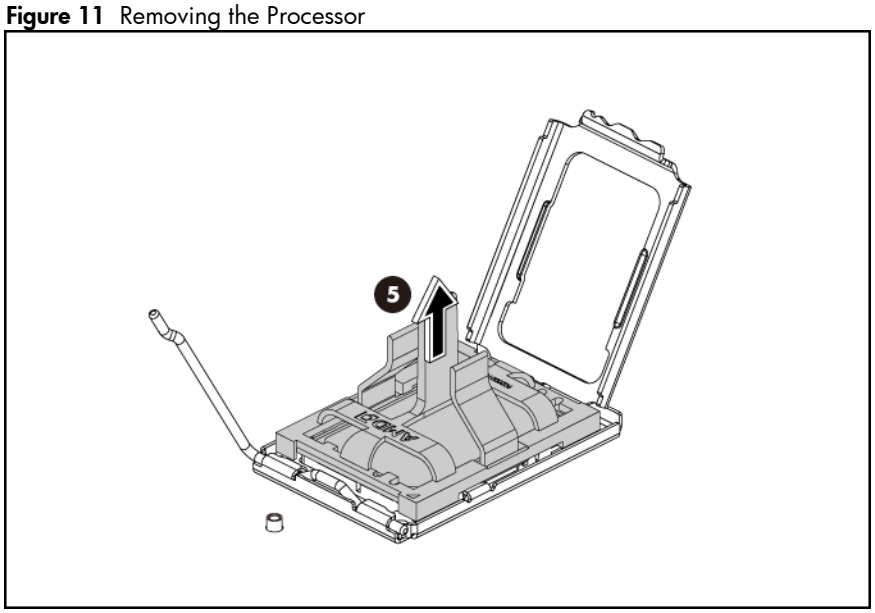
1. Unlock the load lever and lift it up.
2. Open the retention plate.
3. Squeeze the push fingers of the processor installation tool.
4. Hold the processor with the installation tool.

Figure 10 Picking up the Processor from the Socket with the Installation Tool



5. Remove the processor with the installation tool.

Figure 11 Removing the Processor



NOTE: If the processor installation tool is not included, grasp the processor by its edges and lift it out of the socket.

△ **CAUTION:** The pins of the socket are very fragile. Do not bend or damage them.

△ **CAUTION:** Place the processor on a static-dissipating work surface or in an anti-static bag.

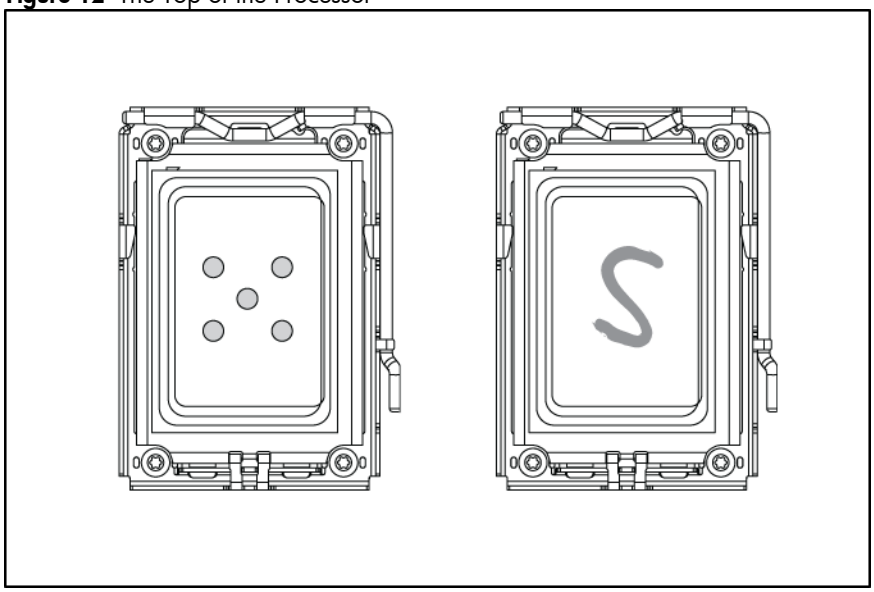
△ **CAUTION:** To allow heat sink to draw as much heat as possible from the processor base, there must be good contact between the heat sink base and the top of the processor. To ensure good contact, you must apply thermal interface material.

To apply the thermal grease compound:

1. Use the alcohol pads provided in spare part kit or a clean cloth dipped in rubbing alcohol to clean the contact surface on the heat sink and on the new processor. Wipe the contact surfaces several times to make sure that no particles or dust contaminants are evident.
2. Apply the thermal grease compound to the integrated heat spreader on the processor in one of the following patterns to insure even distribution.

CAUTION: HP recommends using Shin-Etsu X-23-7783D thermal grease compound for your ProLiant server. Apply the grease to the top of the processor in either a 5 "Dot" or "S" shaped pattern. Ensure even distribution.

Figure 12 The Top of the Processor



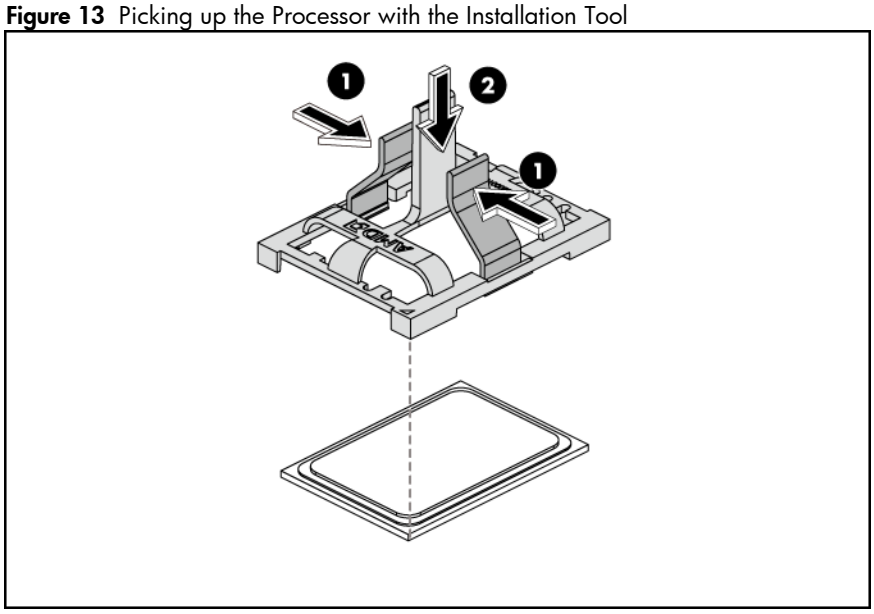
CAUTION: Never touch the bottom of the processor; any contaminant could prevent the mounting pads from making contact with the socket.

CAUTION: Applying too much grease creates a gap between the contact surfaces, significantly reducing the ability of the heat sink to draw out heat. Installing the heat sink with excessive grease can also cause the grease to spread over the processor pins or the system board base, which can cause electrical shorts that damage the system.

To install the new processor:

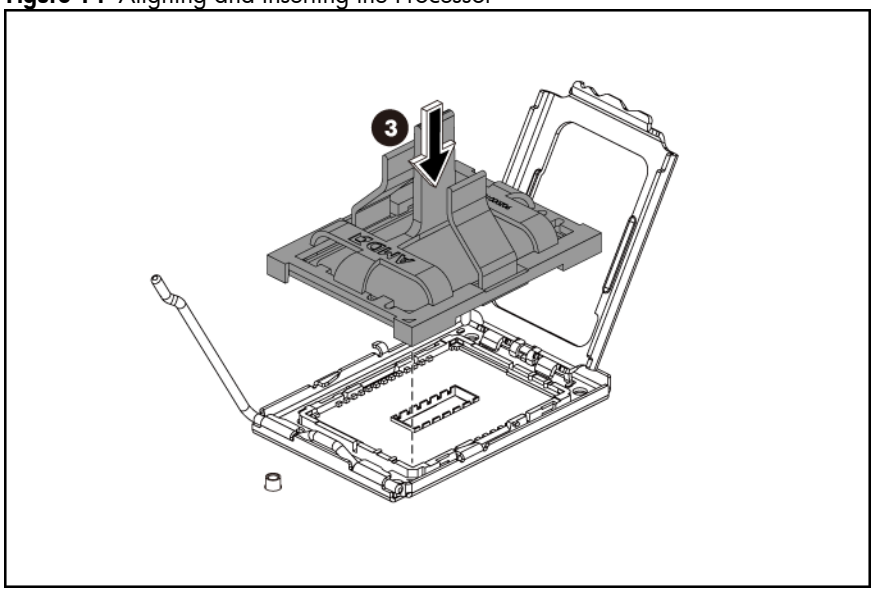
1. Squeeze the push fingers of the processor installation tool.
2. Align the tool on the processor; release the push fingers and hold the processor.

Figure 13 Picking up the Processor with the Installation Tool



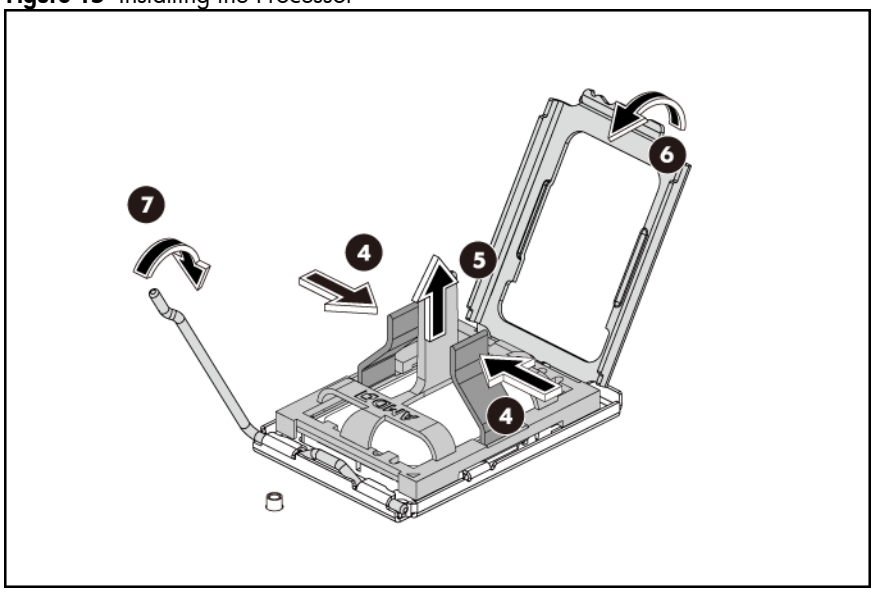
3. Insert the processor into the socket.

Figure 14 Aligning and Inserting the Processor



4. Squeeze the push fingers of the processor installation tool to release the processor.
5. Remove the processor installation tool.
6. Engage the retention plate.
7. Engage the load lever.

Figure 15 Installing the Processor



NOTE: If the processor installation tool is not included, grasp the processor by its edges and install it into the socket.

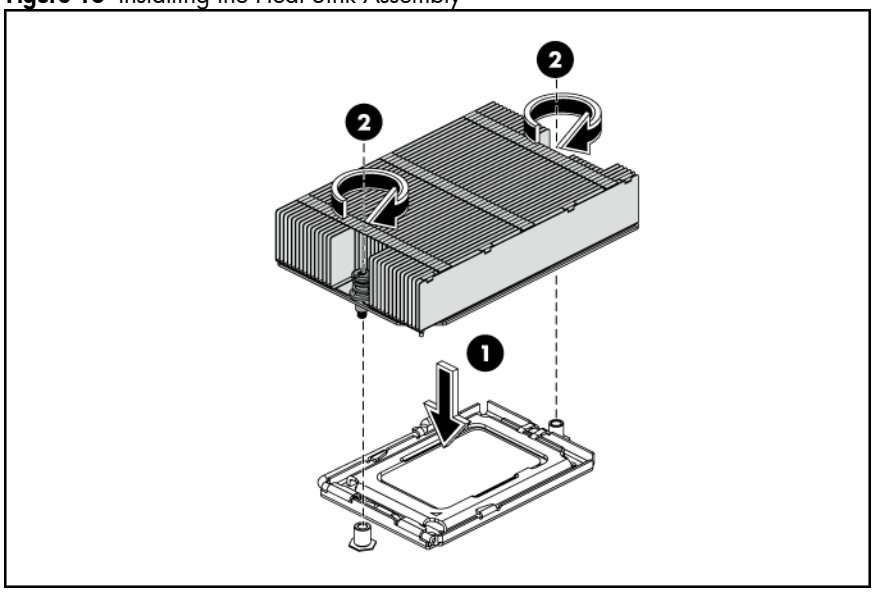
△ **CAUTION:** With the load lever and the retention plate disengaged, hold the processor by its edges and align it over the empty processor socket. Make sure that you properly align the processor with the orientation notch on the socket.

△ **CAUTION:** To prevent overheating or a possible system crash, use only a heat sink model specified for the HP ProLiant SL165z G7 server.

To install the heat sink:

1. Properly align the heat sink spring-loaded screws to the system board mounting holes.
2. Tighten the spring-loaded screws clockwise to secure the heat sink connection to the system board.

Figure 16 Installing the Heat Sink Assembly



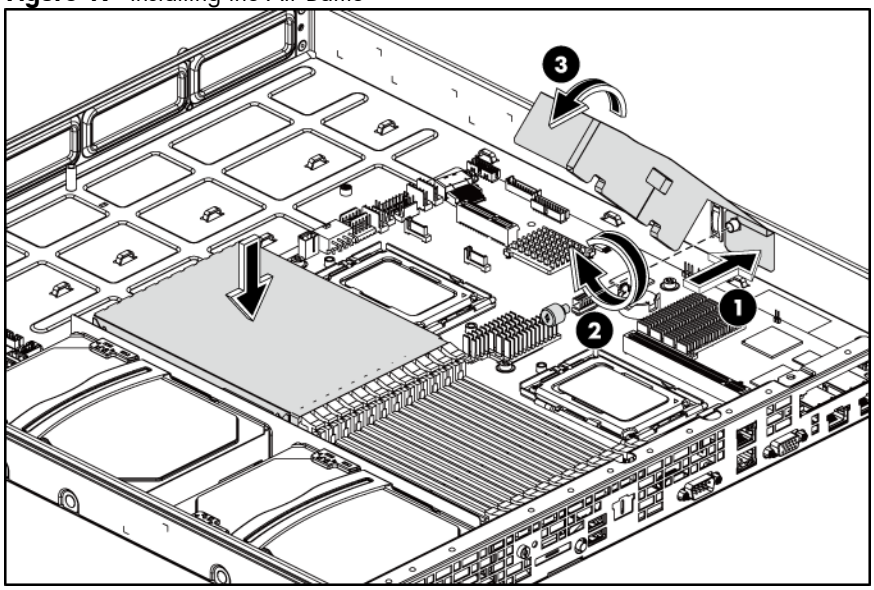
△ **CAUTION:** When installing two heat sinks, please put the heat sinks with the 15-fin side facing the DIMMs.

△ **CAUTION:** For proper cooling, do not operate the server without the top cover, air baffle, expansion slot covers, or blanks installed. For additional information, see the user guide. If hot-plug components are supported, minimize the amount of time the top cover is removed.

To install the air baffle:

1. Connect all necessary cables.
2. Gently place the air baffle 1 on the system board.
3. Align the screw on the air baffle 2 to the hole on the side of chassis, tighten the screw, and then rotate the other side of the air baffle 2 down.

Figure 17 Installing the Air Baffle



Memory

Each system board has twenty-four DIMM slots that support up to 192 GB maximum system memory (8 GB in each of the twenty-four DIMM slots).

You must adhere to the following guidelines when adding or replacing memory modules:

- For 2P system, both physical processors must be of the same type and speed.
- Use DDR3 RDIMM/UDIMM.
- Support single-rank, dual-rank, and quad-rank DIMM.

Table 18 DIMM Population

Memory module population order												
Processor memory socket	1	2	3	4	5	6	7	8	9	10	11	12
Rank support per memory socket	SR/DR	SR/DR/GR	SR/DR	SR/DR	SR/DR/GR	SR/DR	SR/DR	SR/DR/GR	SR/DR	SR/DR	SR/DR/GR	SR/DR
RDIMM Population order without QR	A	1	E	C	K	G	B	J	F	D	L	H
UDIMM Population order without QR	A		E	C		G	B		F	D		H
Population order with QR along with SR/DR	E	A	1	G	C	K	F	B	J	H	D	L
Processor memory bank number	1	3	2	1	3	2	1	3	2	1	3	2

NOTES:

SR = Single Rank, DR = Dual Rank, QR = Quad Rank.

Population rules must be followed for both processors.

Memory modules may be populated one at a time per processor, but populating two at a time per processor provides better performance.

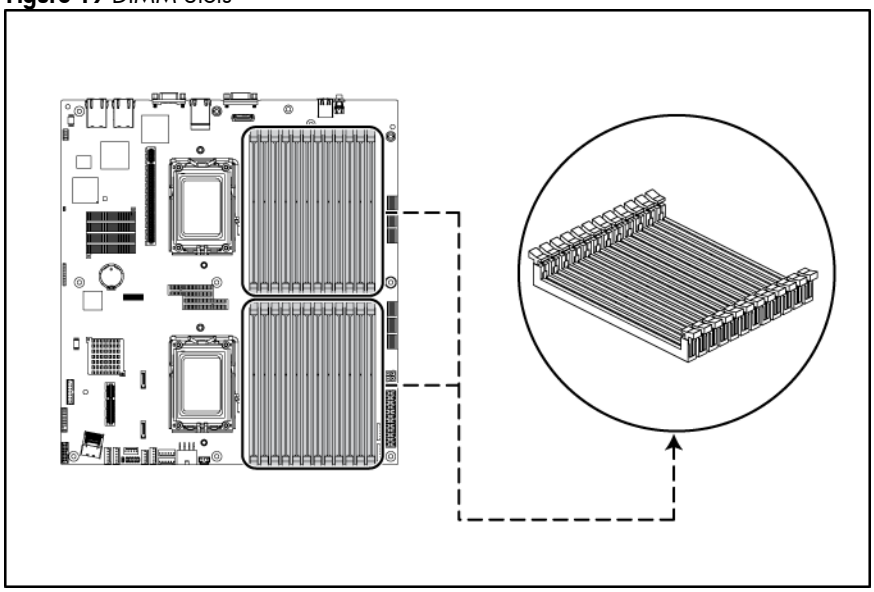
Memory modules should be populated four at a time per processor for best performance.

Memory modules within a memory bank must be identical for best performance.

Quad Rank memory module can only be installed in memory sockets 2, 5, 8, and 11.

For more information on memory configurations, see the server user guide located on the Documentation CD or the HP Support website (http://www.hp.com/support).

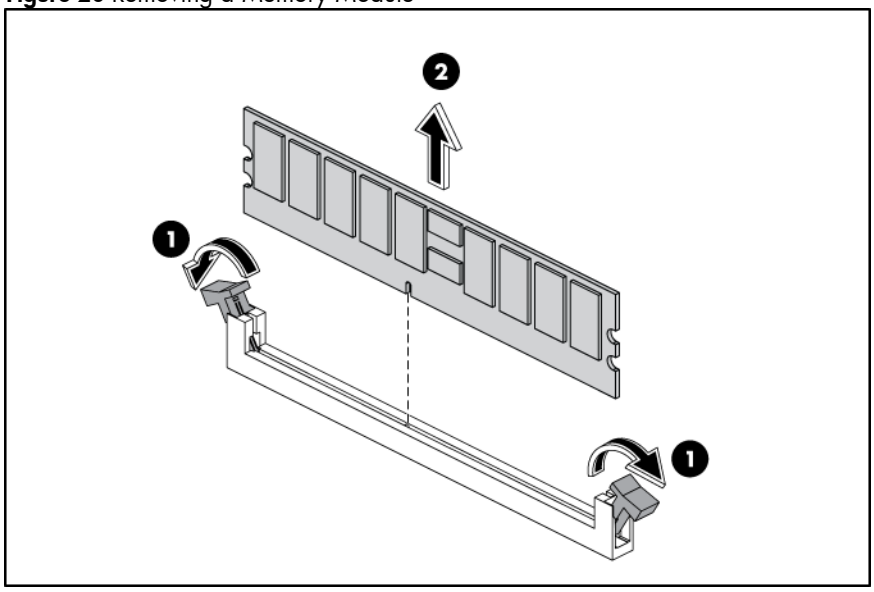
Figure 19 DIMM Slots



To remove memory module:

1. Completely open the holding clips securing the memory module.
2. Gently pull the memory module upward to remove it from the slot.

Figure 20 Removing a Memory Module

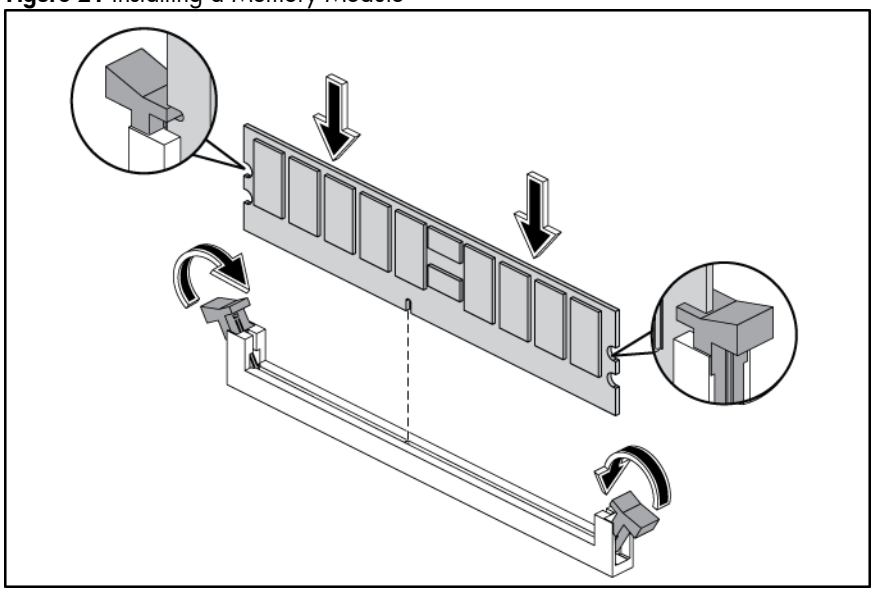


△ **CAUTION:** Place the memory module on a static-dissipating work surface or inside of an anti-static bag.

To install a memory module:

1. Align the notch on the bottom edge of the memory module with the keyed surface of the DIMM slot and then fully press the memory module into the slot until the holding clips snap back in place.

Figure 21 Installing a Memory Module



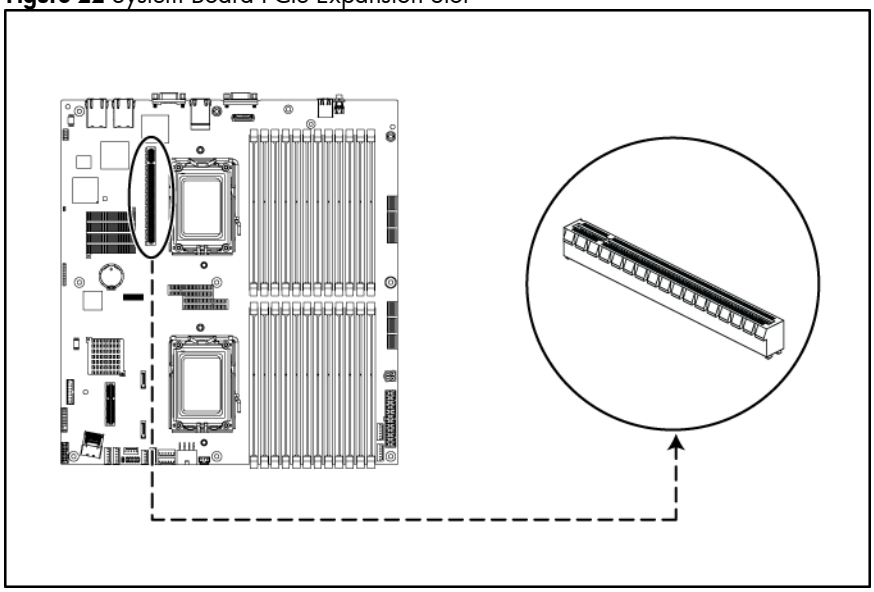
△ **CAUTION:** The DIMM slots are structured to ensure proper installation. If you insert a DIMM but it does not fit easily into the slot, you may have inserted it incorrectly. Reverse the orientation of the DIMM and insert it again.

PCIe expansion card

System board PCIe expansion slot

There is one PCIe expansion slot on each system board.

Figure 22 System Board PCIe Expansion Slot

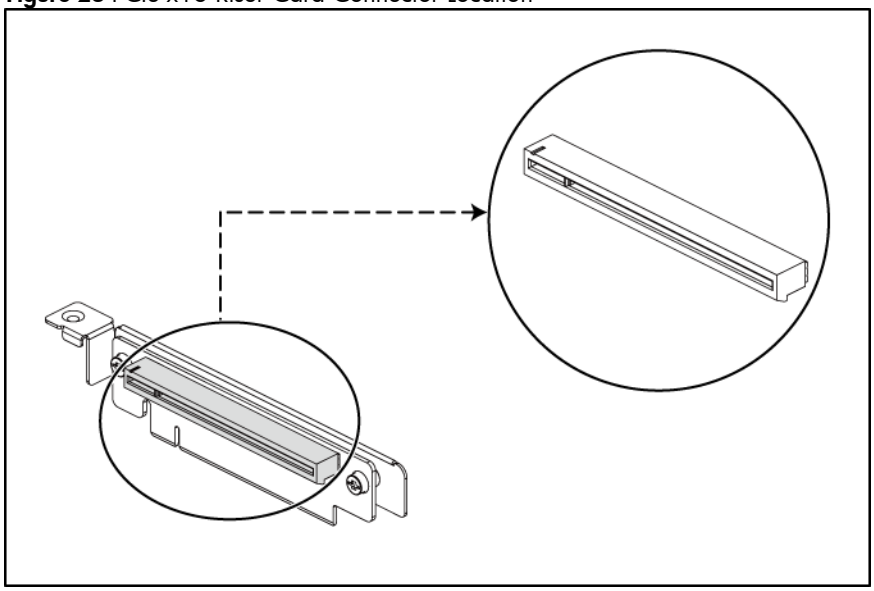


Component Designator	Component	Function
J301	PCIe x16 (FH/FL) slot	Support a PCIe riser card

PCIe riser card expansion slot

The one PCIe riser card attached to the PCIe cage converts the functionality of the system board expansion slot to the slot positioned at a 90° angle from the system board.

Figure 23 PCIe x16 Riser Card Connector Location

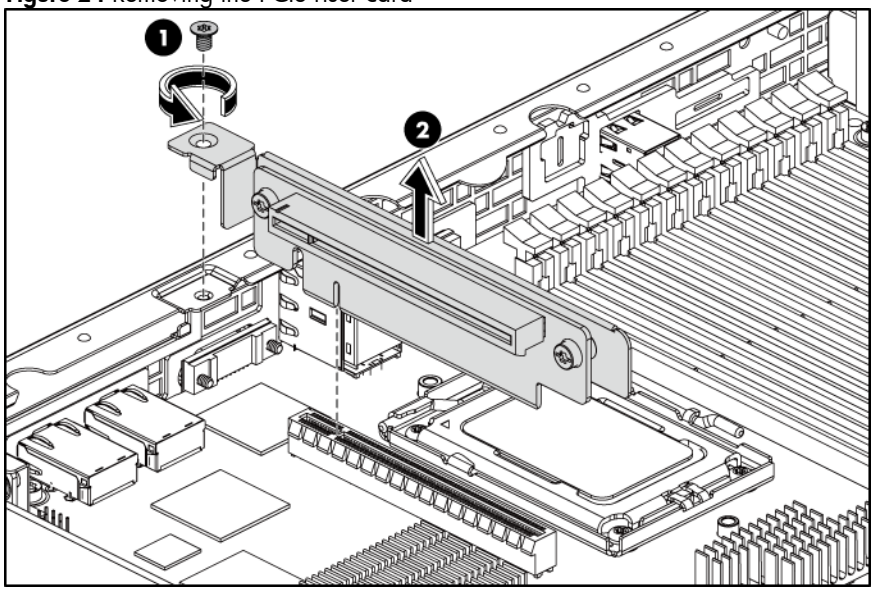


- One slot PCIe riser card (x16 link with x16 slot)

To remove the PCIe riser card with the bracket:

1. Loosen the screw securing the riser card bracket to the side of the chassis.
2. Lift the riser card with the bracket out of the system board.

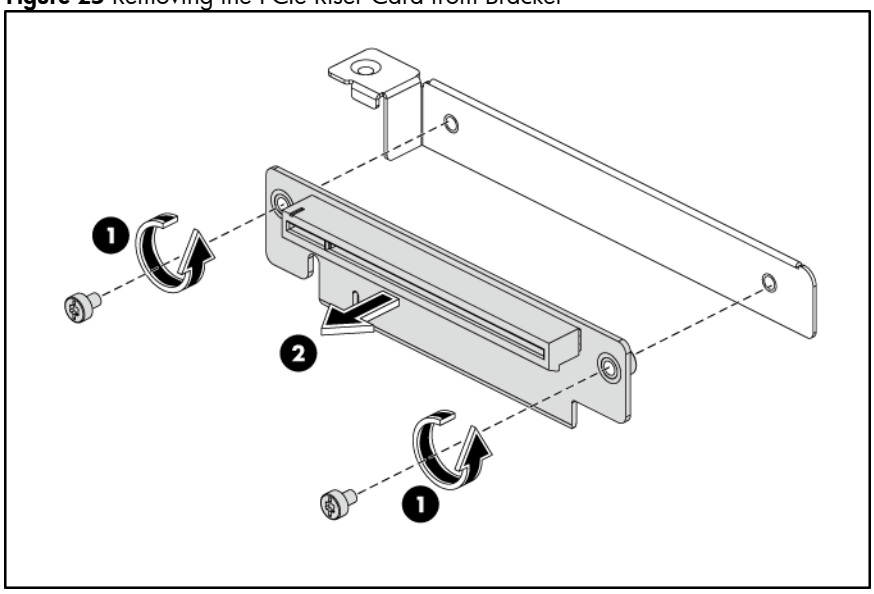
Figure 24 Removing the PCIe riser card



To remove the PCIe x16 riser card from the bracket:

1. Remove the two screws securing the riser card to the bracket.
2. Remove the riser card from the bracket.

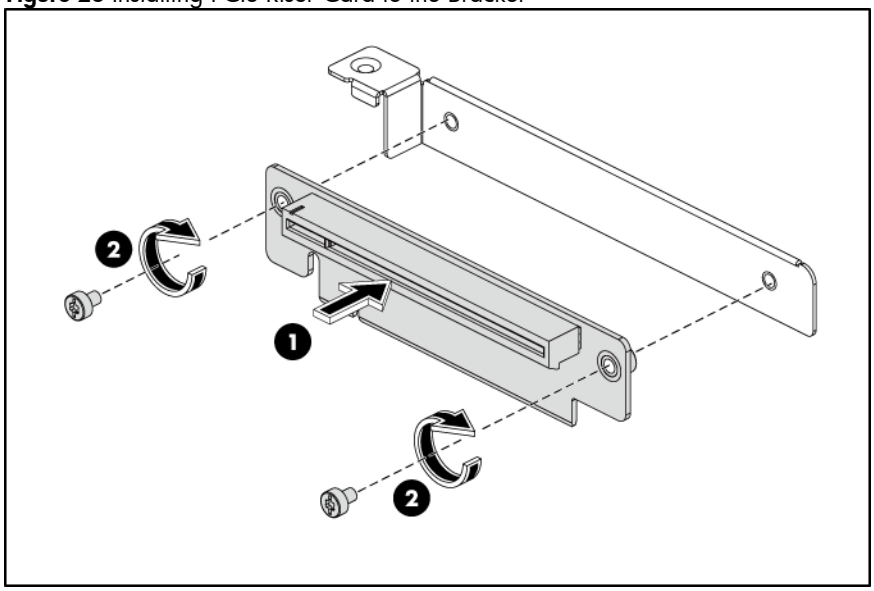
Figure 25 Removing the PCIe Riser Card from Bracket



To install the PCIe x16 riser card to the bracket:

1. Align the screw holes on the riser card to the screw holes on the bracket.
2. Fasten the two screws to secure the riser card to the bracket.

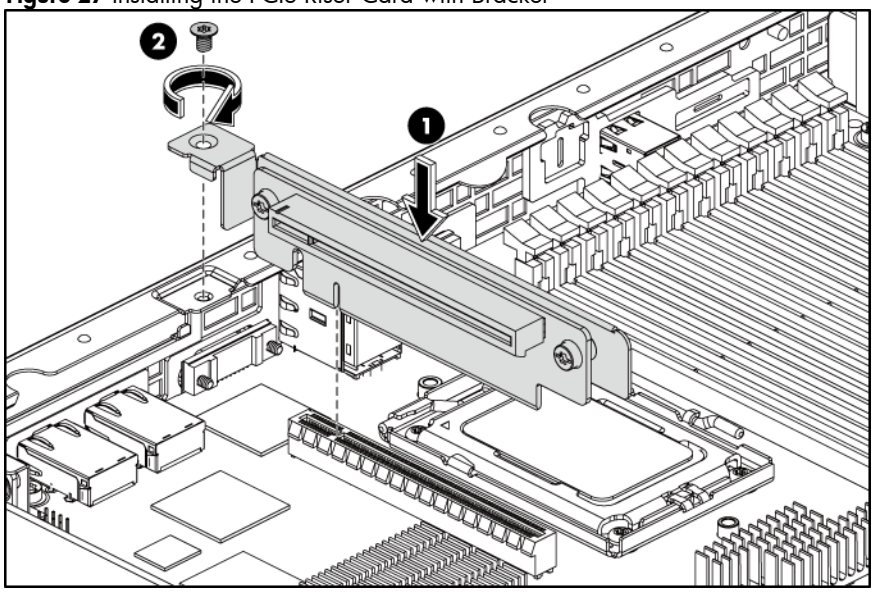
Figure 26 Installing PCIe Riser Card to the Bracket



To install the riser card with the bracket into the system board:

1. Align the riser card connector to the system board expansion slot and then press the riser card assembly down to ensure full connection to the system board.
2. Fasten the screw to secure the bracket to the side of the chassis.

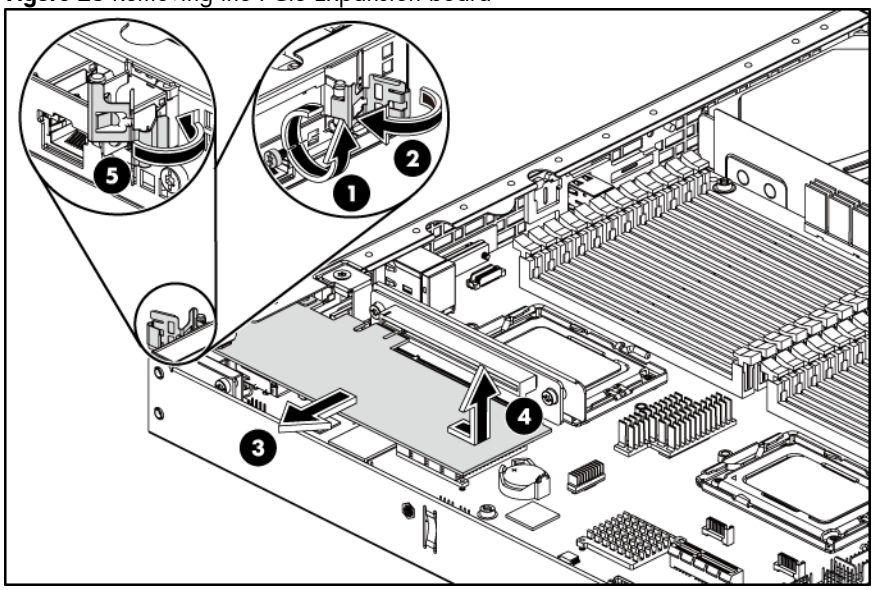
Figure 27 Installing the PCIe Riser Card with Bracket



To remove the PCIe expansion board:

1. Remove the screw that secures the PCIe expansion board.
2. Press the PCIe expansion board latch spring.
3. Pull the PCIe expansion board back and away from the PCIe riser card.
4. Slide the PCIe expansion board bracket across the chassis.
5. Close the PCIe expansion board latch.

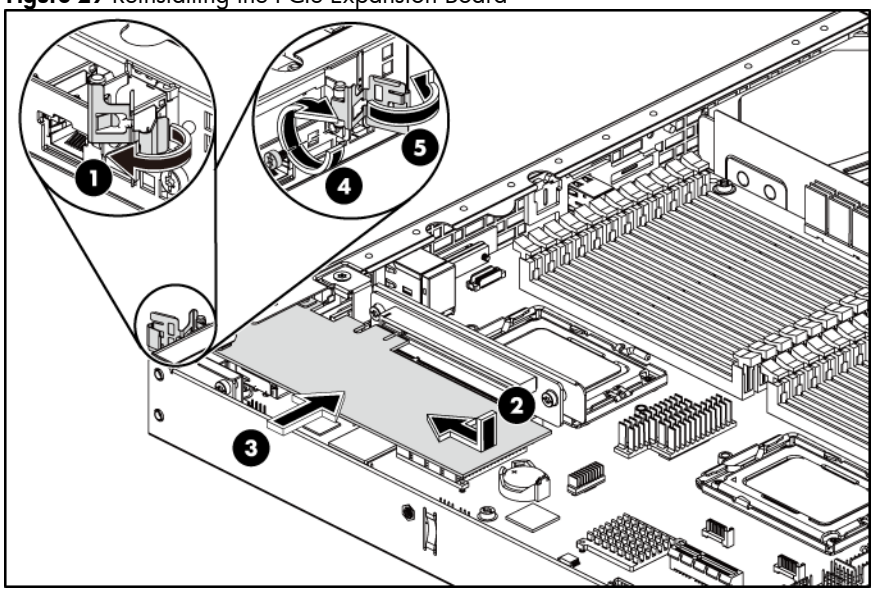
Figure 28 Removing the PCIe Expansion board



To install the PCIe expansion board:

1. Press the PCIe expansion board latch spring.
2. Slide the PCIe expansion board bracket across the chassis.
3. Insert the PCIe expansion board into the slot on the PCIe riser card.
4. Install and fasten the screw.
5. Close the PCIe expansion board latch.

Figure 29 Reinstalling the PCIe Expansion Board

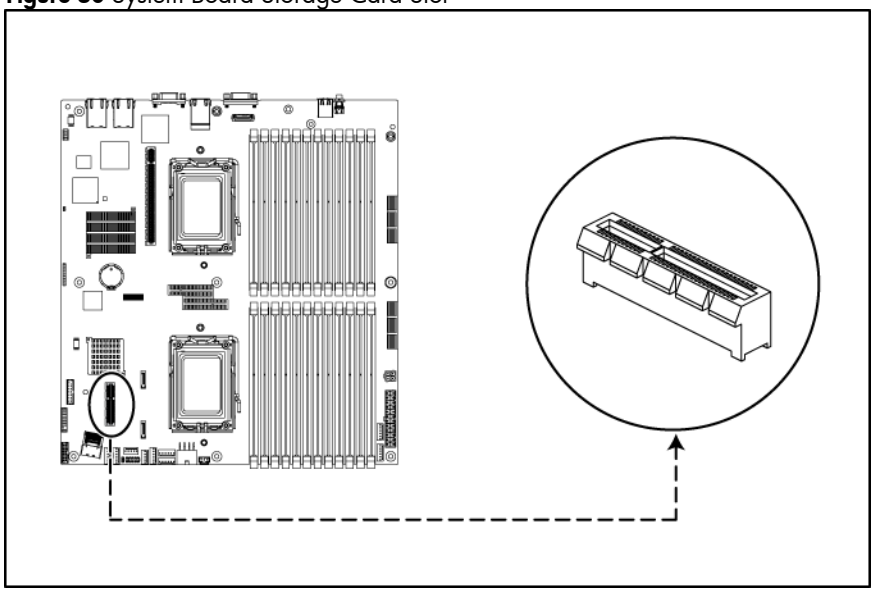


Storage card

System board storage card slot

There is one storage card slot on each system board.

Figure 30 System Board Storage Card Slot

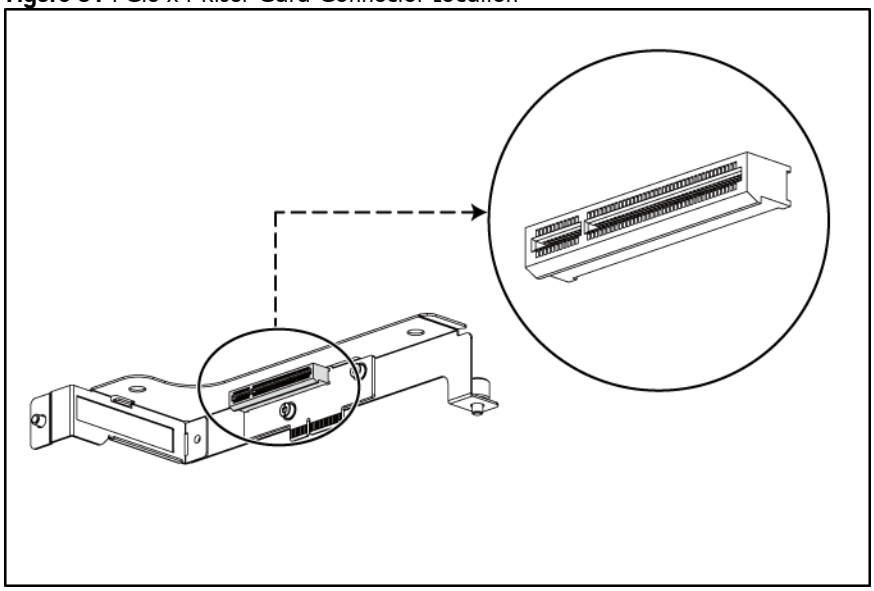


Component Designator	Component	Function
J78	PCIe x4 (LP) slot (storage card slot)	Supports a PCIe riser card

PCIe riser card expansion slot

The PCIe riser card attached to the storage card cage converts the functionality of the system board expansion slot to the slot positioned at a 90° angle from the system board.

Figure 31 PCIe x4 Riser Card Connector Location



- One slot PCIe riser card (x4 link with x8 slot)

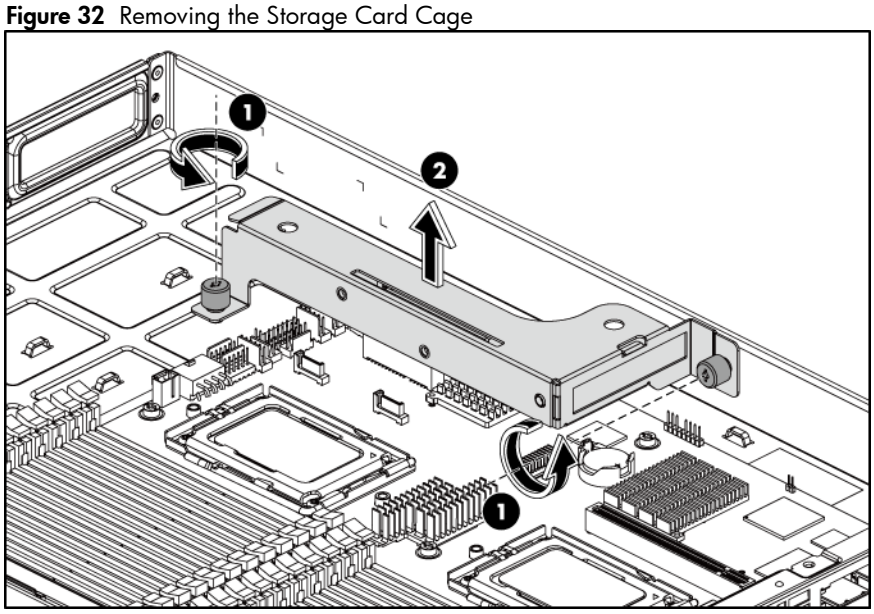
Storage card cage

To remove the storage card cage:

NOTE: Disconnect all cables connecting an existing expansion board to the system board.

1. Loosen the two screws that secure the storage card cage to the server.
2. Lift the storage card cage away from the server.

Figure 32 Removing the Storage Card Cage

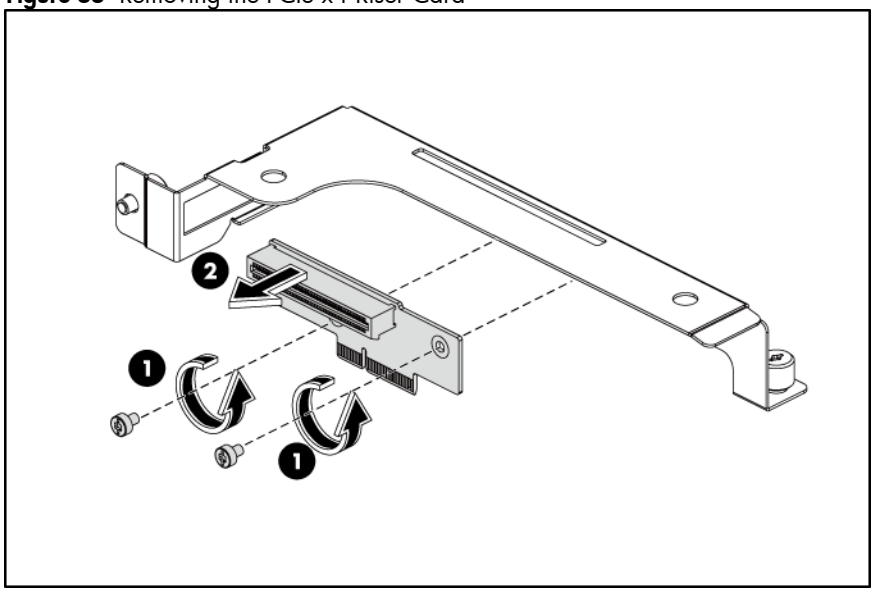


Installing PCIe riser card

To remove the PCIe riser card:

1. Loosen the two screws securing the riser card to the storage card cage.
2. Remove the riser card from the storage card cage.

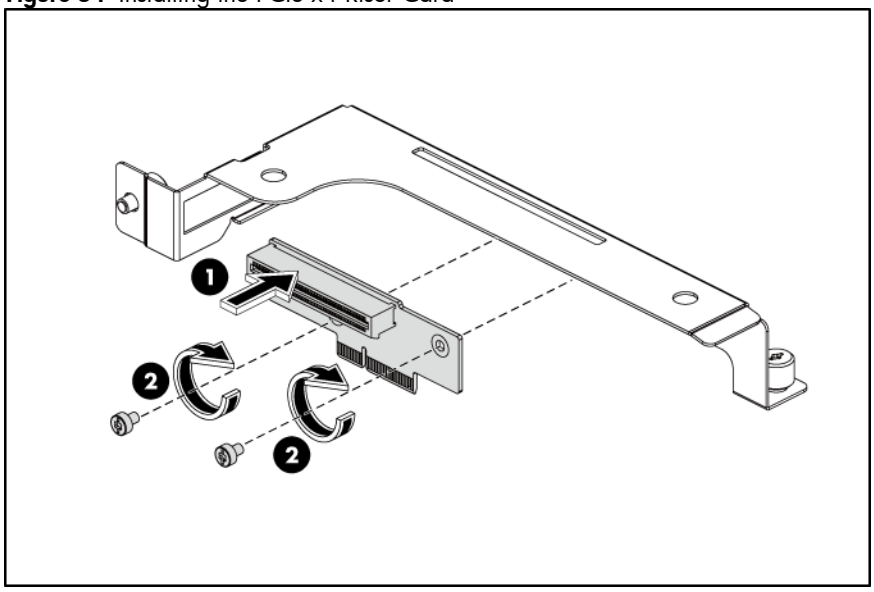
Figure 33 Removing the PCIe x4 Riser Card



To install the PCIe riser card:

1. Align the screw holes on the riser card to the screw holes on the storage card cage.
2. Install and tighten the two screws that secure the riser card to the storage card cage.

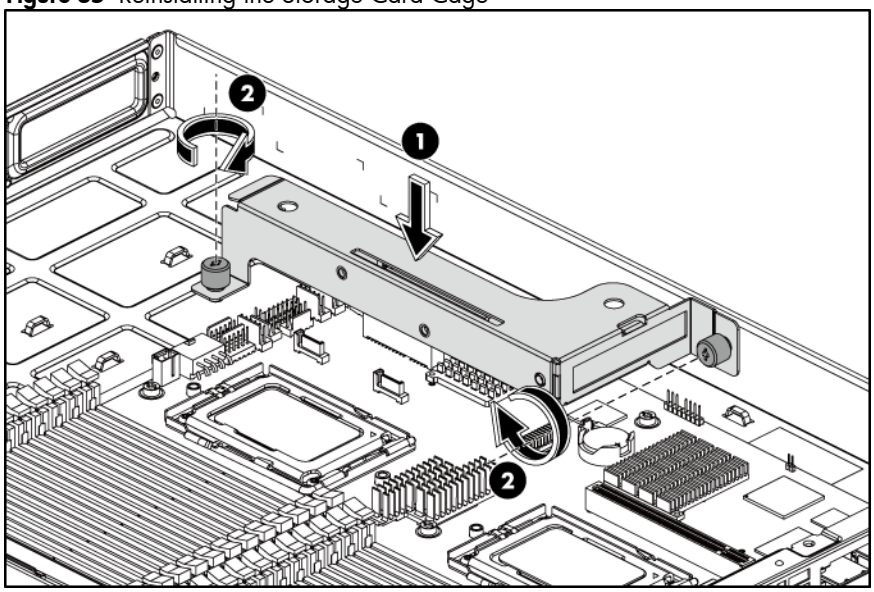
Figure 34 Installing the PCIe x4 Riser Card



To reinstall the storage card cage:

1. Align the storage card cage to the system board storage card slot, and then press it down to ensure full connection to the system board.
2. Tighten the two screws to secure the storage card cage to the server.

Figure 35 Reinstalling the Storage Card Cage



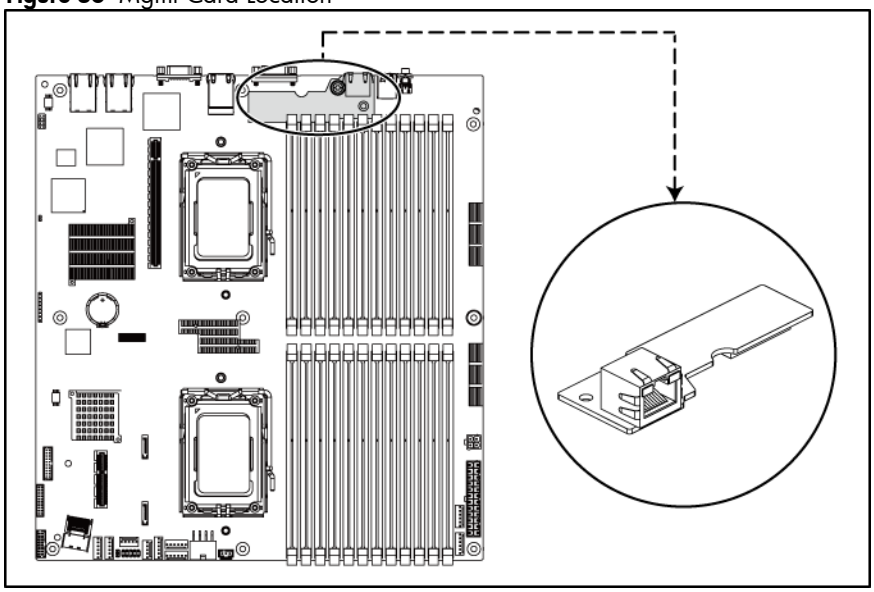
3. Connect the necessary cable(s) to the system board.

Mgmt card (Optional)

Each system board can support one mgmt card. The mgmt card is optional for the shipment.

The following figure shows the mgmt card location.

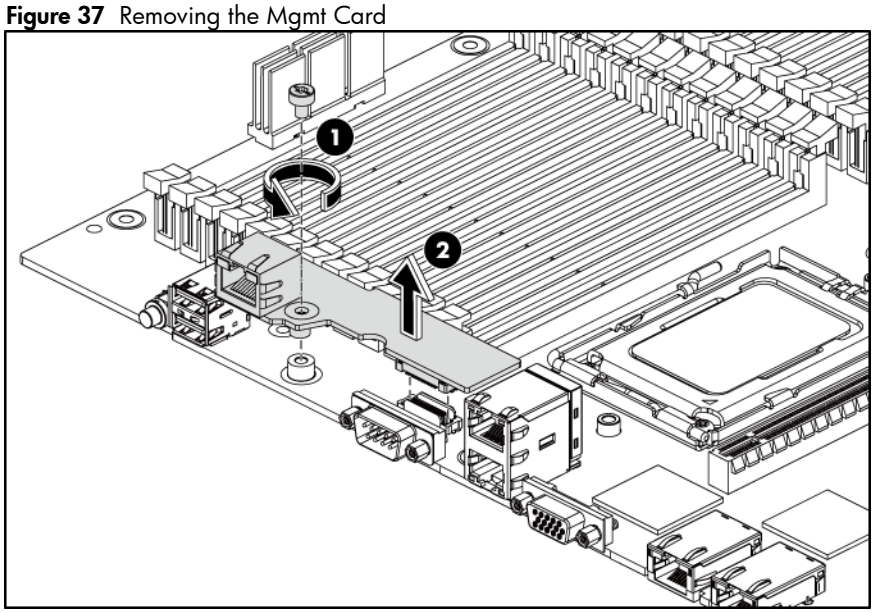
Figure 36 Mgmt Card Location



To remove the mgmt card:

1. Loosen the screw on the mgmt card.
2. Remove the mgmt card from the mgmt card connector.

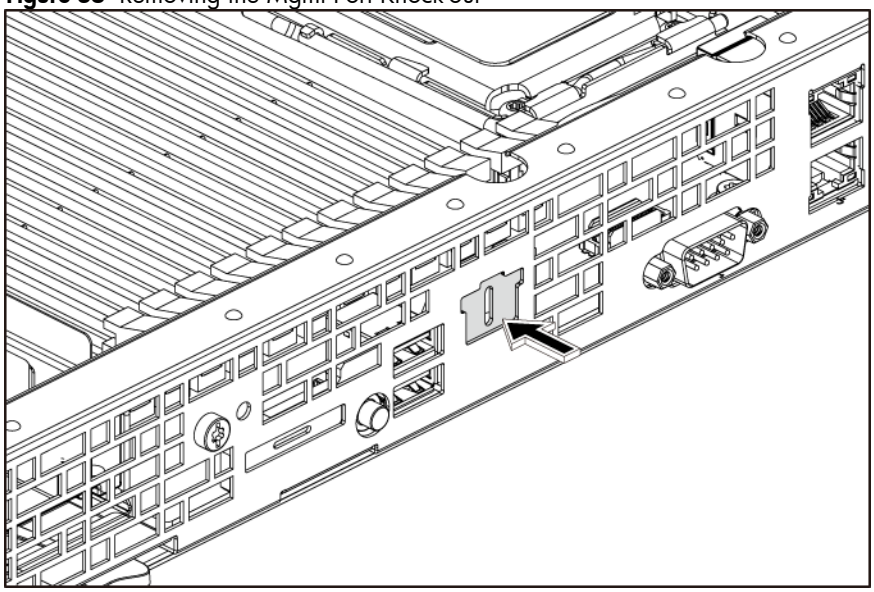
Figure 37 Removing the Mgmt Card



To reinstall the mgmt card:

1. Remove the mgmt port knock-out.

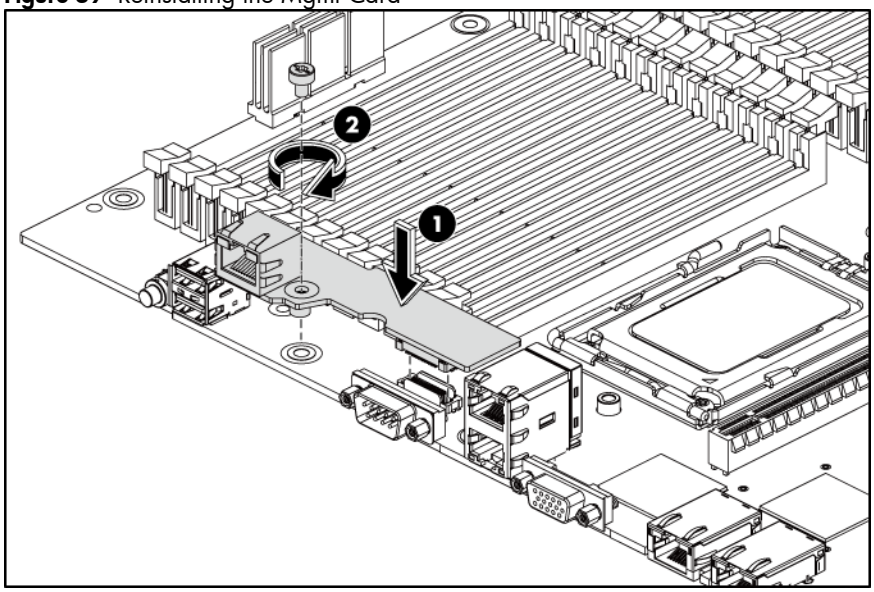
Figure 38 Removing the Mgmt Port Knock-out



NOTE: You must use the slotted driver to remove the knock-out.

2. Insert the mgmt card into the mgmt card connector on the system board.
3. Tighten the screw clockwise to secure the mgmt card to the system board.

Figure 39 Reinstalling the Mgmt Card

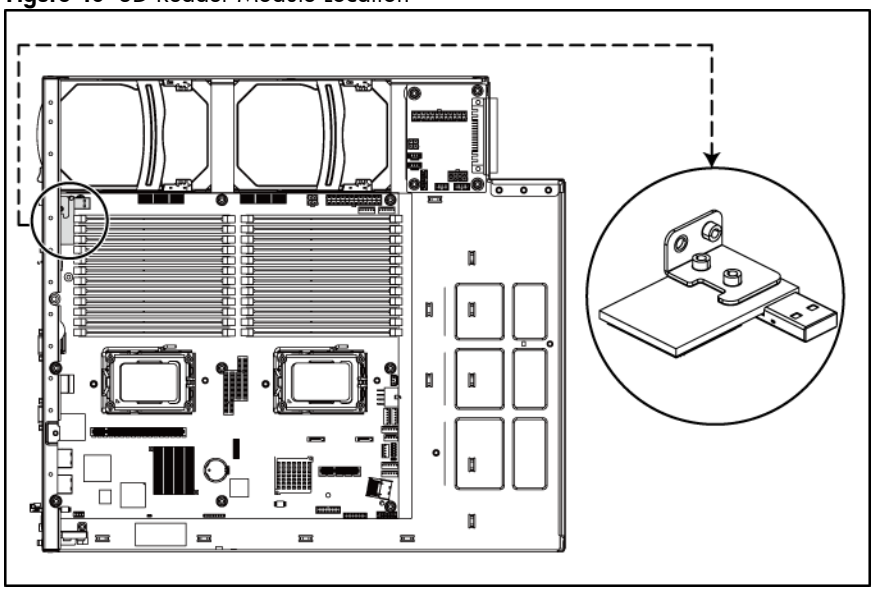


SD reader module (Optional)

Each system board can support one SD reader module. The SD reader module is optional for the shipment.

The following figure shows the SD reader module location.

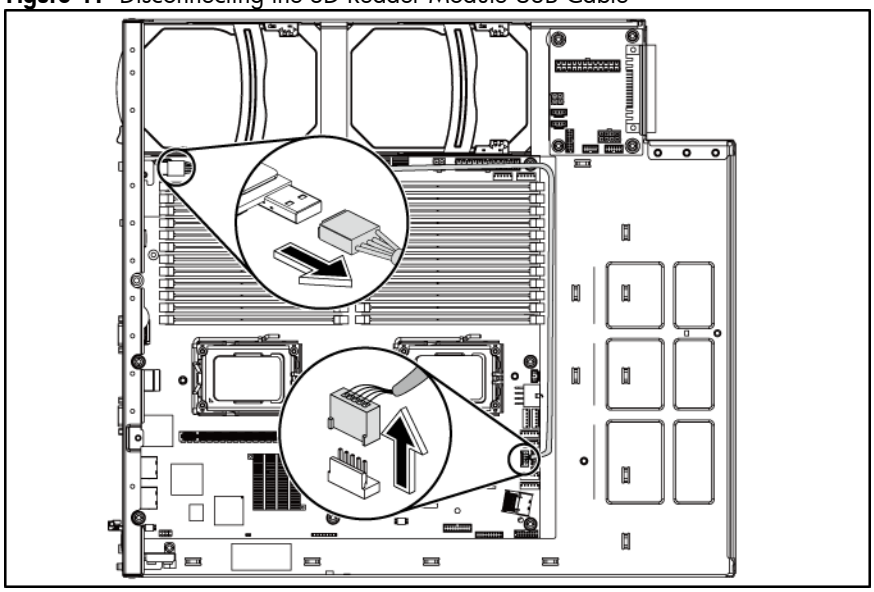
Figure 40 SD Reader Module Location



To remove the SD reader module:

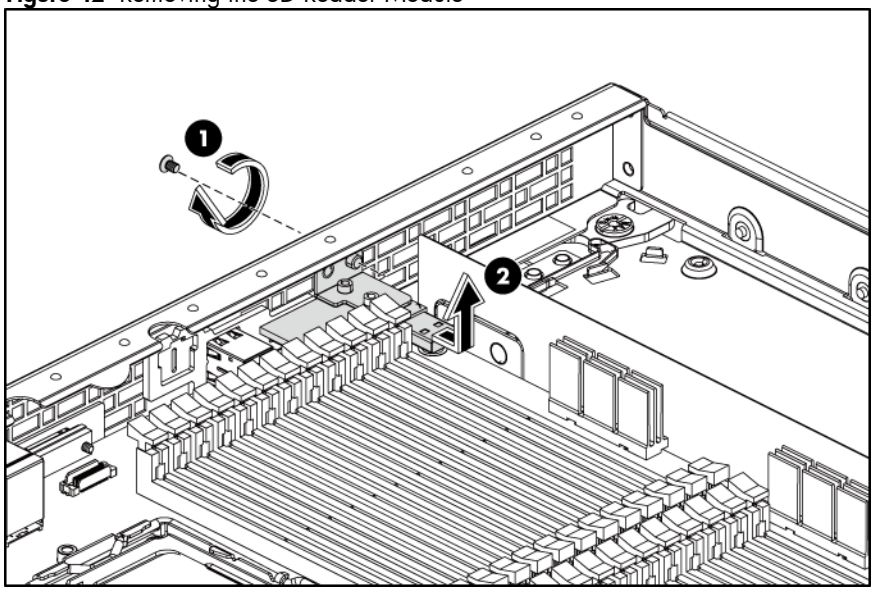
1. Disconnect the SD reader module USB cable from USB connectors on the SD reader module and the system board.

Figure 41 Disconnecting the SD Reader Module USB Cable



2. Loosen the screw that secures the SD reader module to the server and then remove the SD reader module.

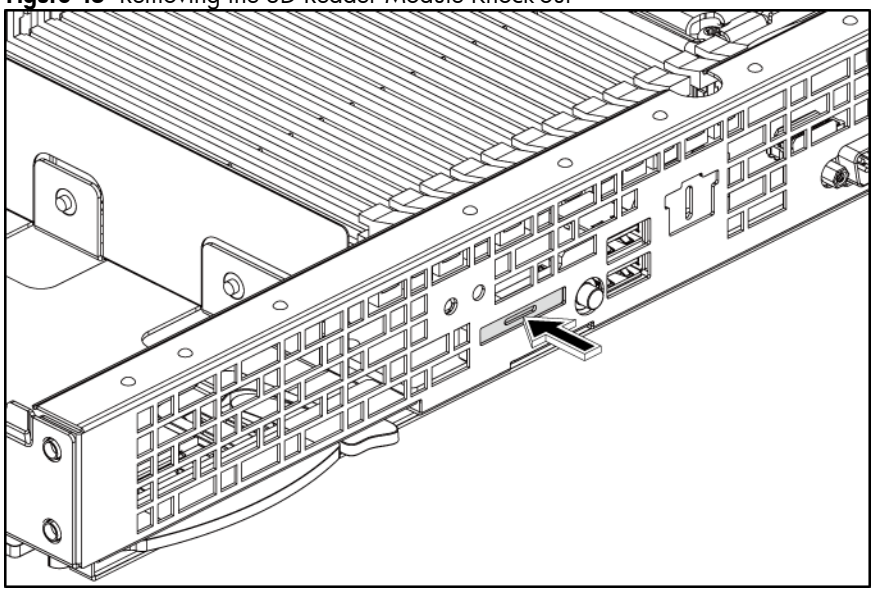
Figure 42 Removing the SD Reader Module



To reinstall the SD reader module:

1. Remove the SD reader module knock-out from the front panel of the server.

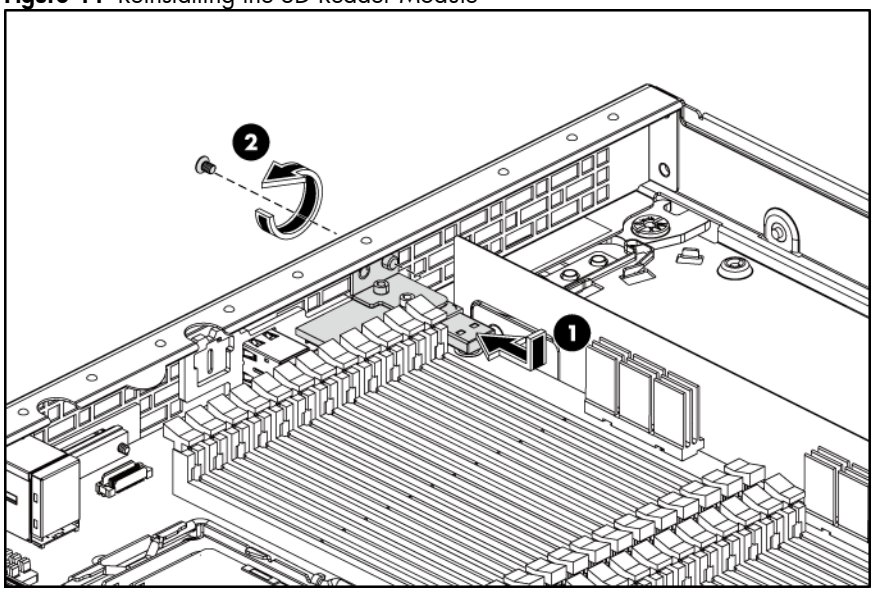
Figure 43 Removing the SD Reader Module Knock-out



NOTE: You must use the slotted driver to remove the knock-out.

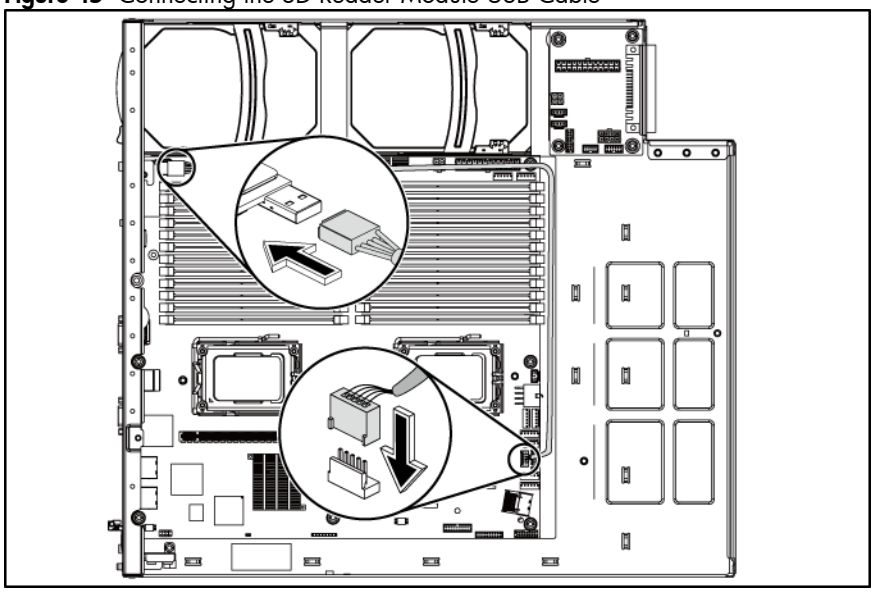
2. Align the SD reader module to the front panel, and tighten the screw that secures the SD reader module to the server.

Figure 44 Reinstalling the SD Reader Module



3. Connect the SD reader module USB cable from USB connectors on the SD reader module and the system board.

Figure 45 Connecting the SD Reader Module USB Cable

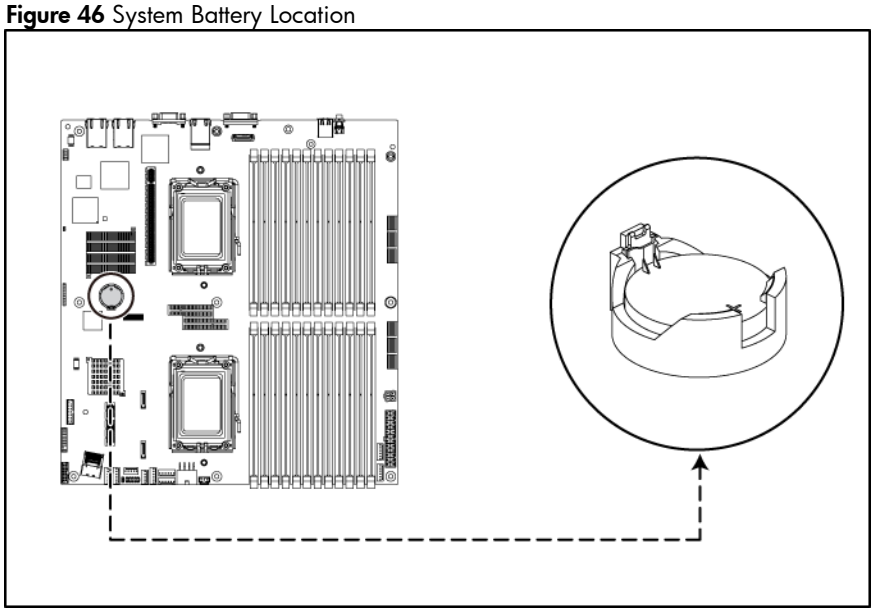


System battery

The server uses nonvolatile memory that requires two batteries to retain system information when power is removed.

This 3 V lithium coin cell battery is located on the system board.

Figure 46 System Battery Location



⚠ **WARNING:** Note the following reminders when replacing the system battery:

- Replace the battery with the same type as the battery recommended by HP. Use of another battery may present a risk of fire or explosion.
- A risk of fire and chemical burn exists if the battery is not handled properly. Do not disassemble, crush, puncture, or short external contacts, or expose the battery to temperatures higher than 60°C (140°F).
- Do not dispose of used battery in water or fire. Dispose of used batteries according to manufacturer's

instructions.

CAUTION: Loss of BIOS settings occurs when the battery is removed. You must reconfigure BIOS settings whenever you replace the battery.

NOTE: If the server no longer automatically displays the correct date and time, you may need to replace the system battery. Under normal usage, battery life is five to ten years.

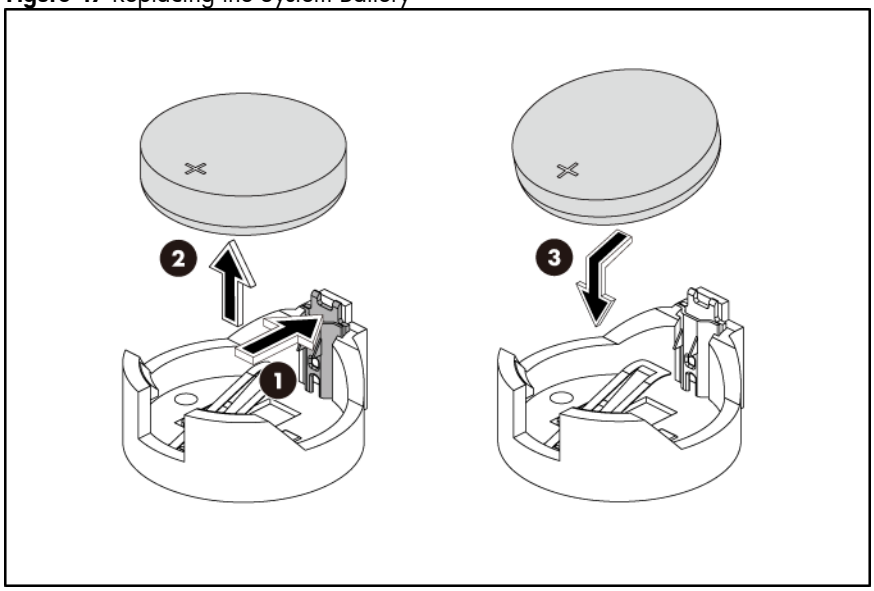
To replace the system battery:

1. Power down the server.
2. Disconnect the power cord(s).
3. Unlock the server if necessary and remove the top cover as described in the section System cover.

NOTE: If the expansion board is installed to the riser card, remove the expansion board before releasing the battery. Refer to the PCIe expansion card section in this chapter for detailed procedures.

4. Release the battery from its holder by squeezing the metal clamp that extends above one edge of the battery. When the battery pops up, lift it out.
5. To insert the new battery, slide one edge of the replacement battery under the holder's lip with the positive side facing the metal clamp. Push the other edge down until the clamp snaps over the top of the battery.

Figure 47 Replacing the System Battery

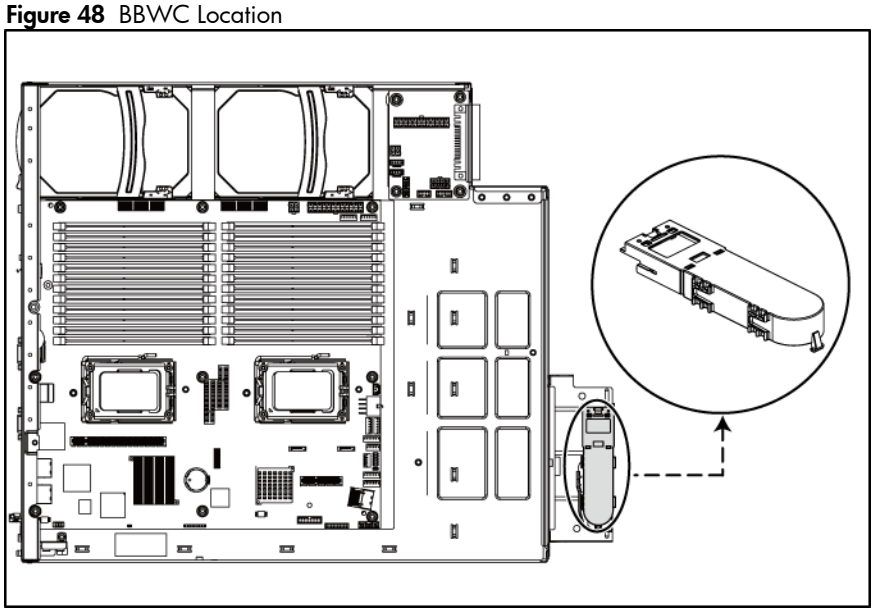


BBWC (Optional)

Each system board can support one BBWC. The BBWC is optional for the shipment.

The following figure shows the BBWC location.

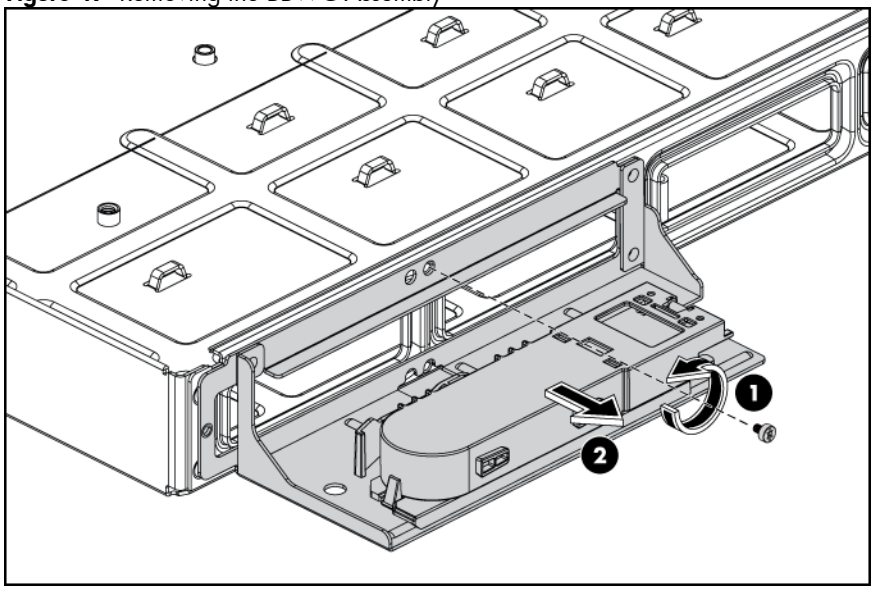
Figure 48 BBWC Location



To remove the BBWC:

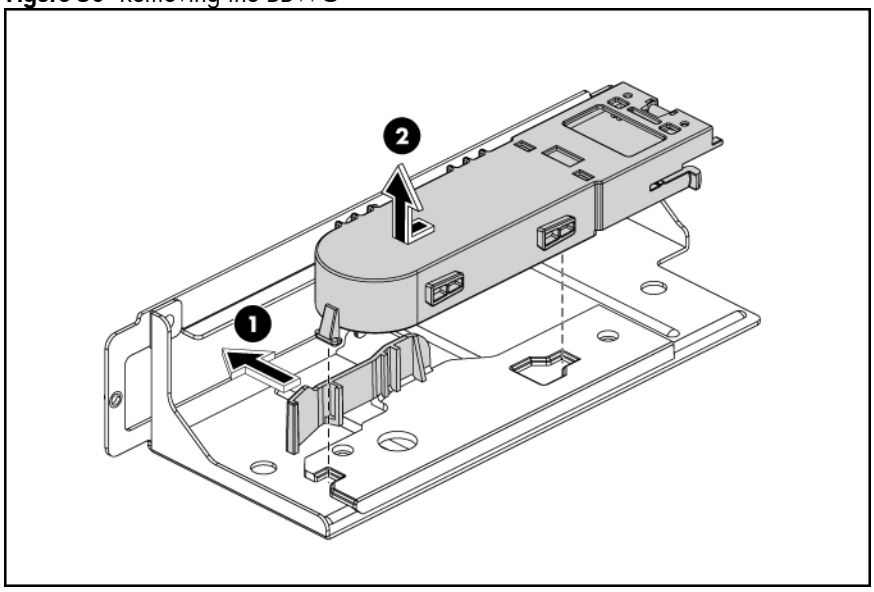
1. Loosen the screw that secures the BBWC assembly to the server tray, and then remove the BBWC assembly away from the server tray.

Figure 49 Removing the BBWC Assembly



2. Pull the BBWC retaining latch.
3. Slide the BBWC back, up and out of the tray.

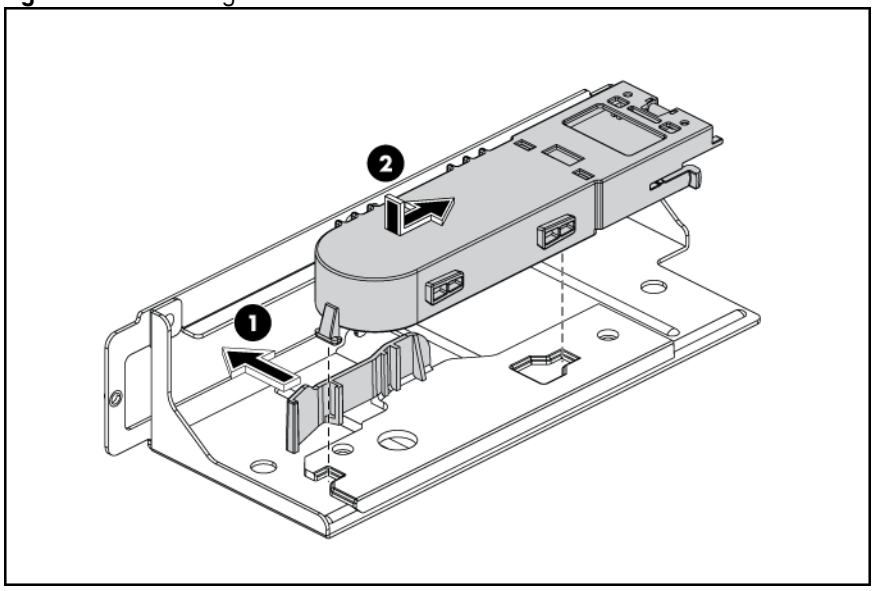
Figure 50 Removing the BBWC



To reinstall the BBWC:

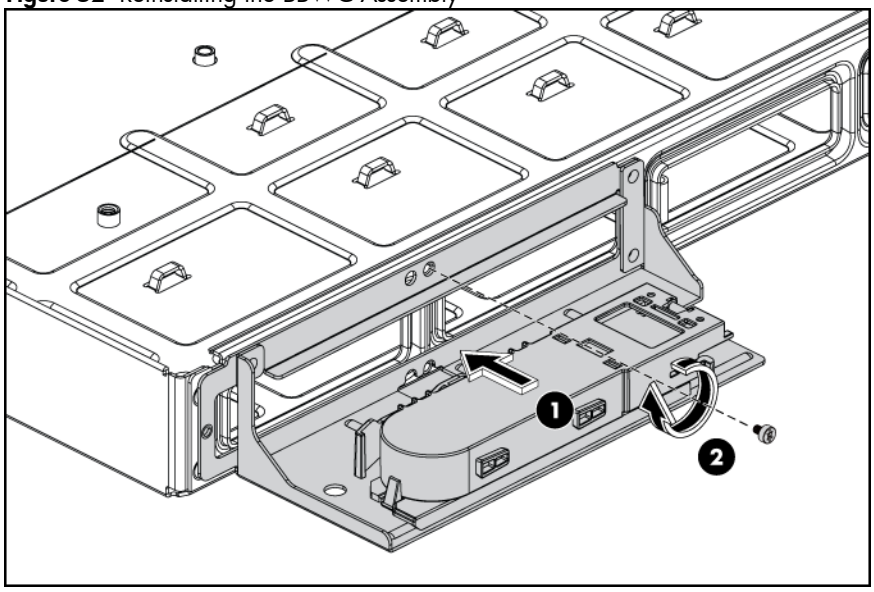
1. Pull the BBWC retaining latch.
2. At the same time, align the locking tabs on the BBWC to their holes on the tray. Press the BBWC into the tray, and then push it along the direction of the arrow to lock the locking tabs.

Figure 51 Reinstalling the BBWC



3. Align the hole on the BBWC assembly to its corresponding hole on the server tray.
4. Meanwhile, fasten the screw that secures the BBWC assembly to the server tray.

Figure 52 Reinstalling the BBWC Assembly



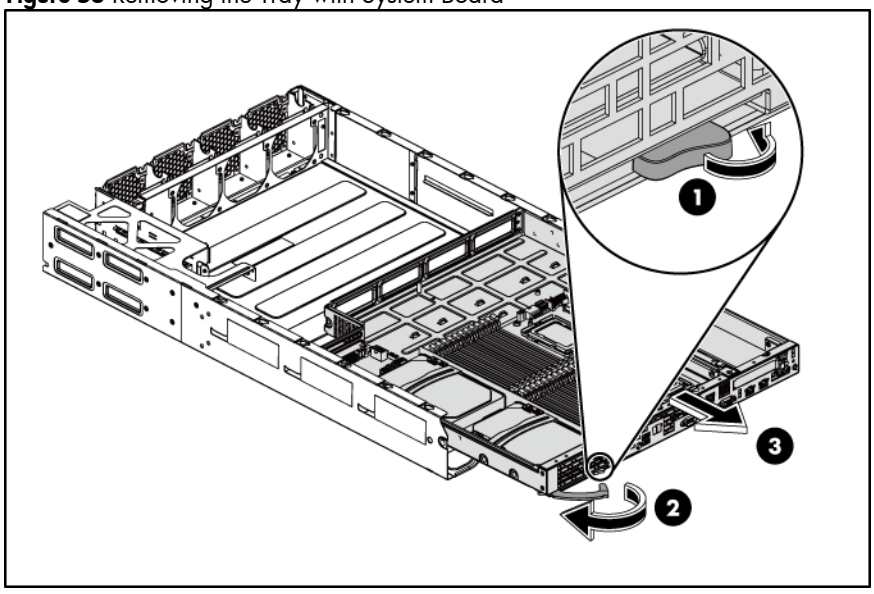
System board removal and replacement procedure

To remove the system board:

Remove the tray with the system board:

1. Press the tray latch to release the tray handle.
2. Rotate the tray handle to disengage the power connector.
3. Pull the tray assembly out of the chassis.

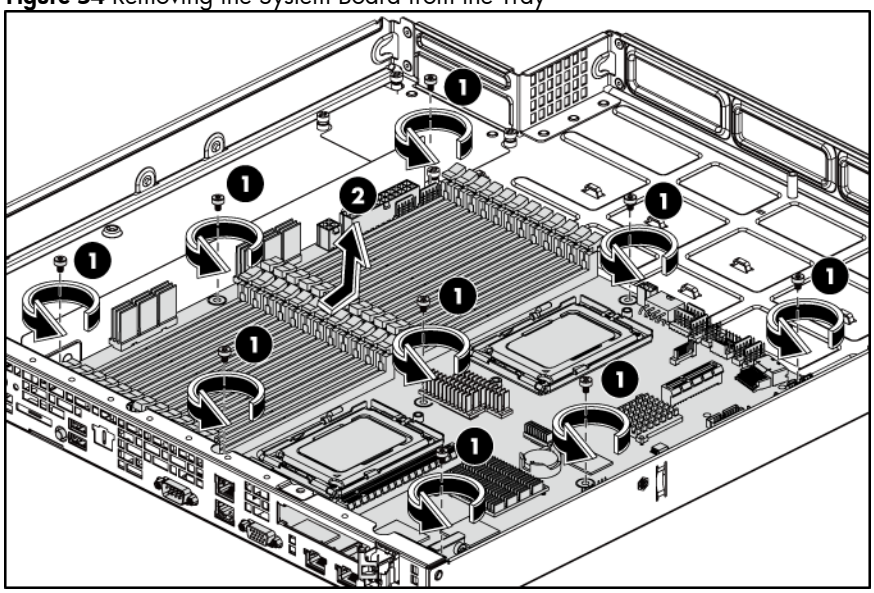
Figure 53 Removing the Tray with System Board



Remove the system board from the tray:

1. Loosen the nine screws that secure the system board to the tray.
2. Slide the system board back, up and out of the tray. Remove the system board from the tray.

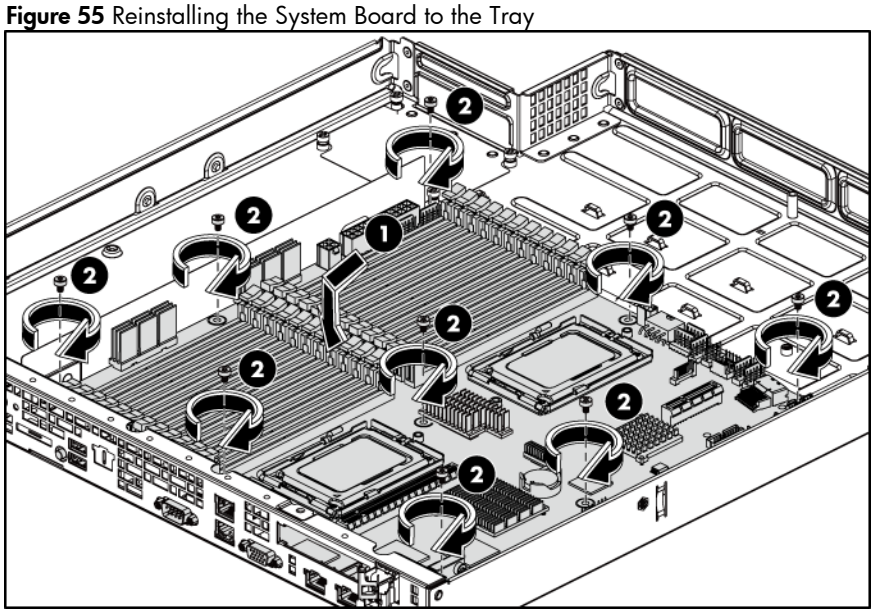
Figure 54 Removing the System Board from the Tray



To reinstall the system board:

1. Align the system board I/O connectors to their openings and slide the system board into place. The nine screw holes on the tray should align with the system board.
2. Fasten the nine screws on the system board to secure the system board to the tray.

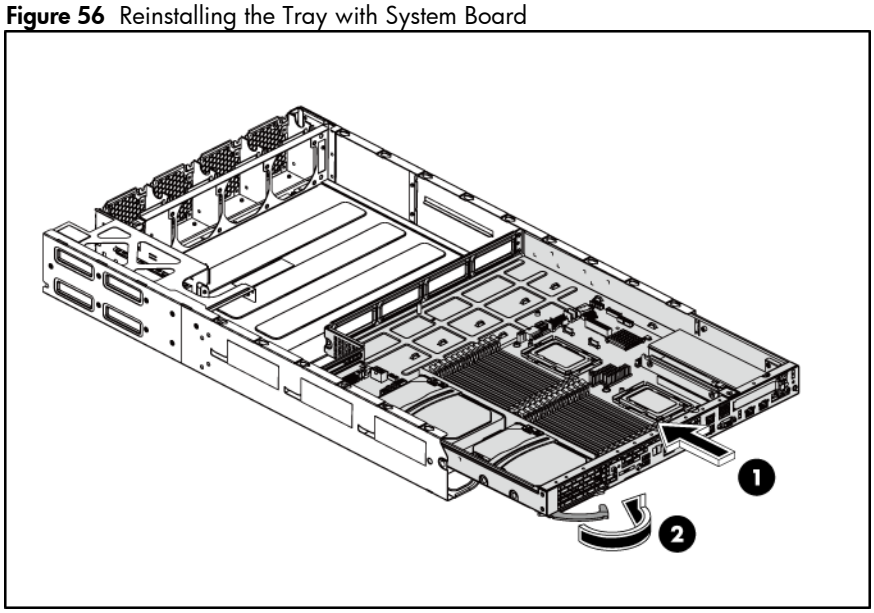
Figure 55 Reinstalling the System Board to the Tray



To reinstall the tray with system board:

1. Slide the tray assembly into the tray bay until it stops.
2. Rotate the tray handle until the tray latch catches.

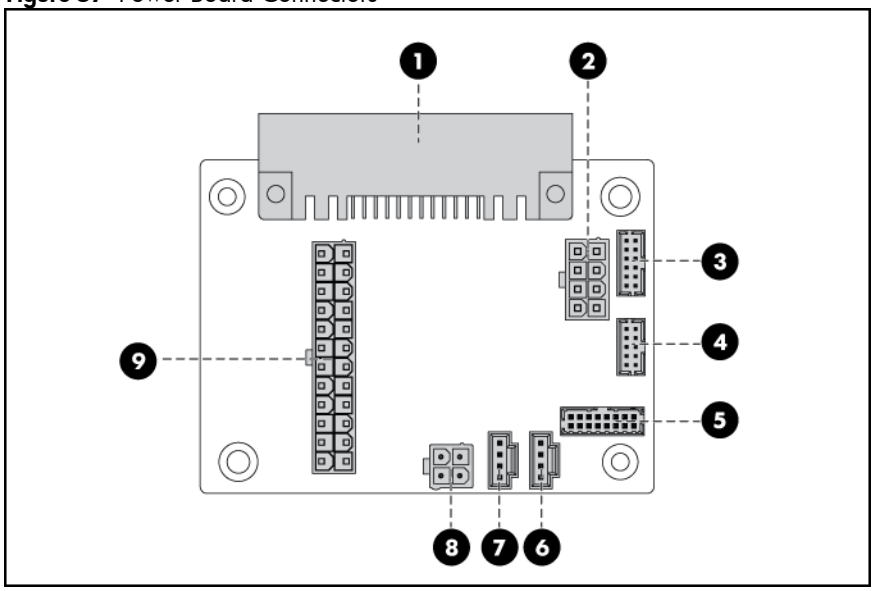
Figure 56 Reinstalling the Tray with System Board



Power board

The following figure shows the top side of the power board.

Figure 57 Power Board Connectors

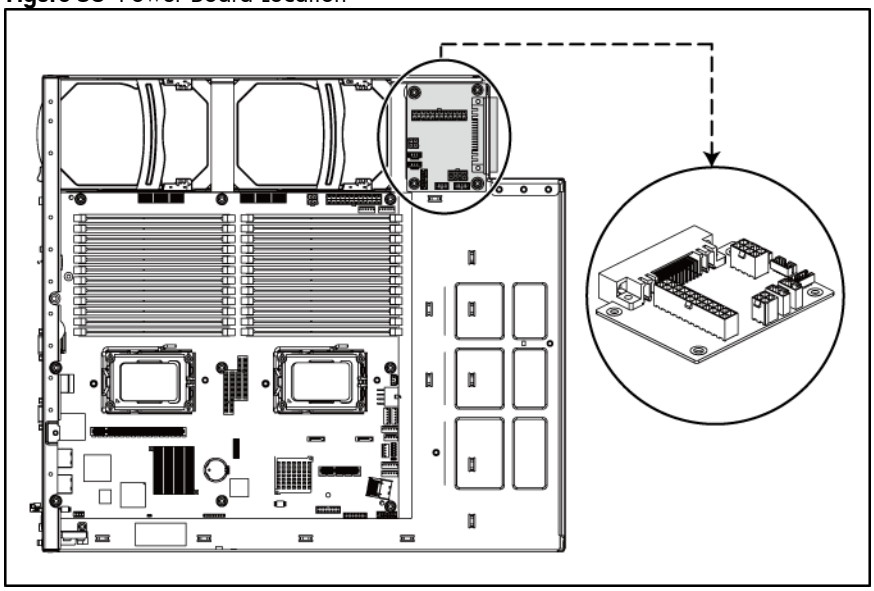


Item	Description
1	Convertor connector
2	8-pin power connector
3	Front panel connector
4	FPIO connector

Item	Description
5	16-pin power connector
6	SATA power connector
7	SATA power connector
8	4-pin power connector
9	24-pin power connector

The following figure shows the power board location.

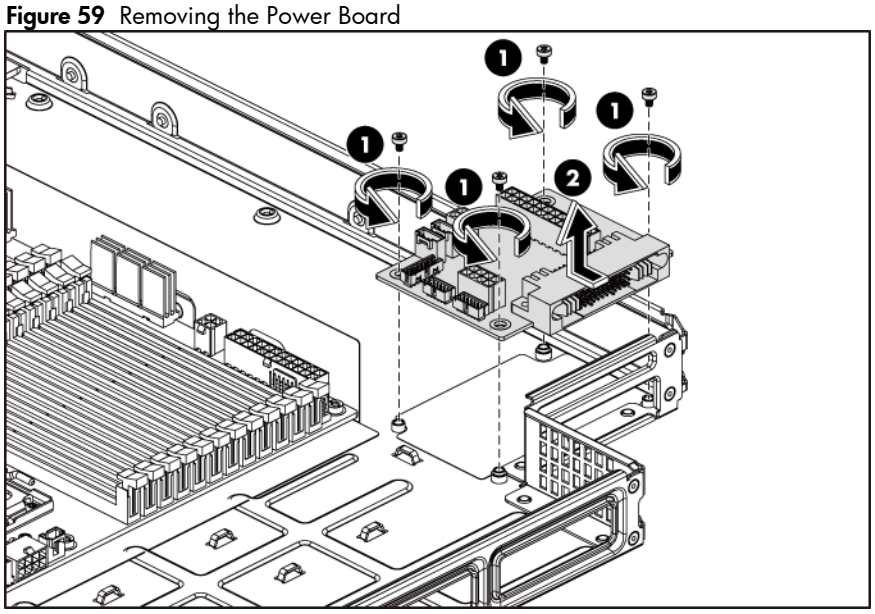
Figure 58 Power Board Location



To remove the power board:

1. Loosen the four screws that secure the power board to the server tray.
2. Push the power board forward, up and out of the server tray.

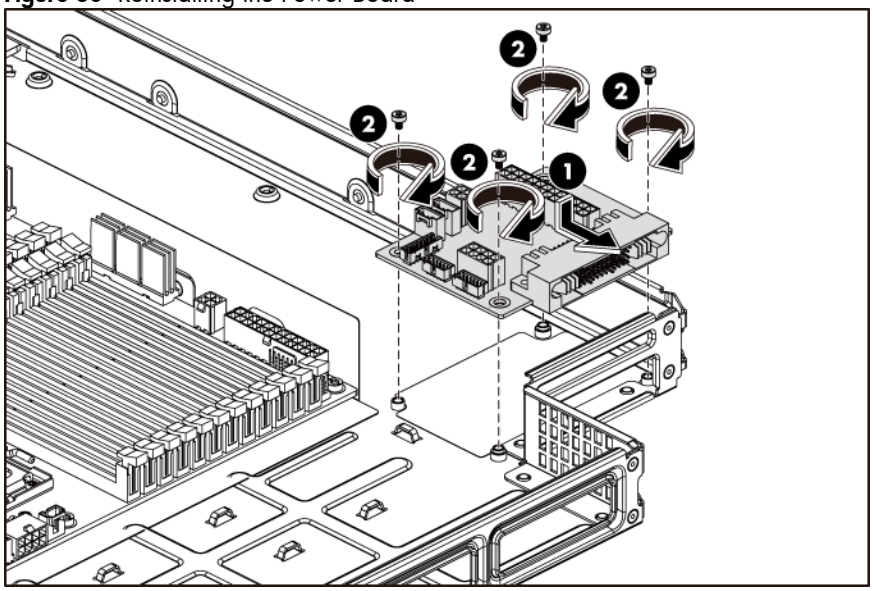
Figure 59 Removing the Power Board



To reinstall the power board:

1. Align the four holes on the power board to their corresponding holes on the server tray, and then push the power board along the direction of the arrow.
2. Fasten the four screws that secure the power board to the server tray.

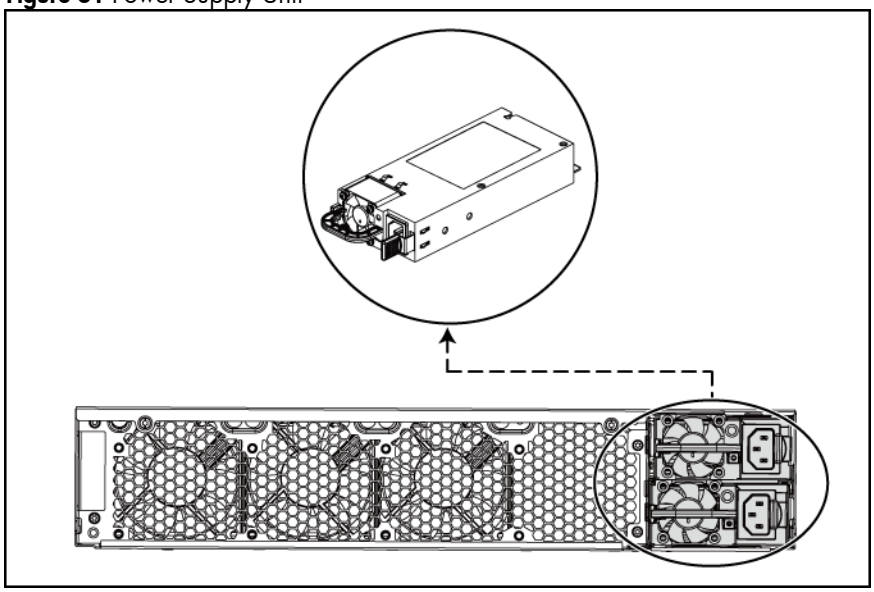
Figure 60 Reinstalling the Power Board



Power supply unit (PSU)

Located on the rear panel of the server power supply is a standard auto ranging 750 W or 1200 W PSU with PFC (power factor correction) function.

Figure 61 Power Supply Unit



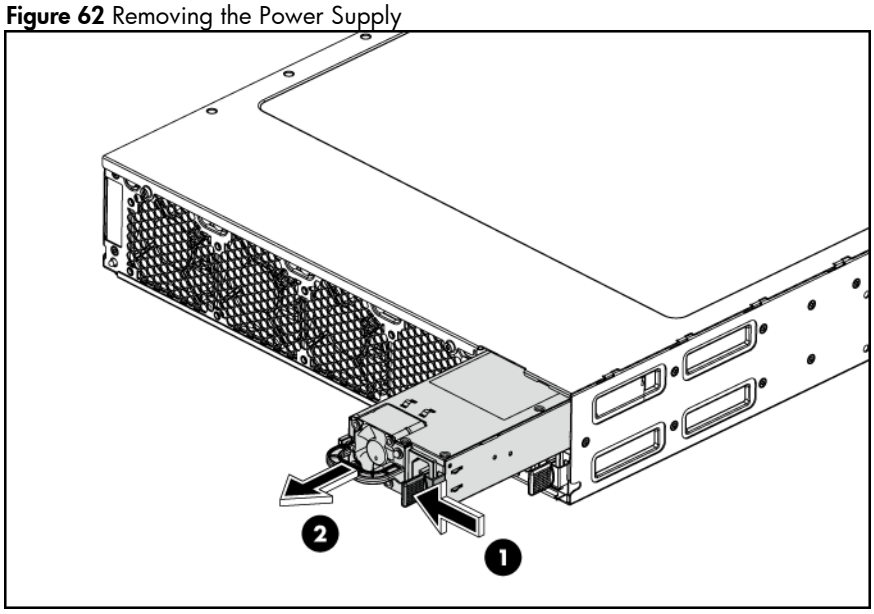
⚠ **WARNING:** Take note of the following reminders to reduce the risk of personal injury from electric shock hazards and/or damage to the equipment.

- Installation of power supply units should be referred to individuals who are qualified to service server systems and are trained to deal with equipment capable of generating hazardous energy levels.
- DO NOT open the power supply unit. There are no serviceable parts inside it.

To remove the power supply:

1. Press the red colored handle.
2. Slide the power supply out of the power supply cage.

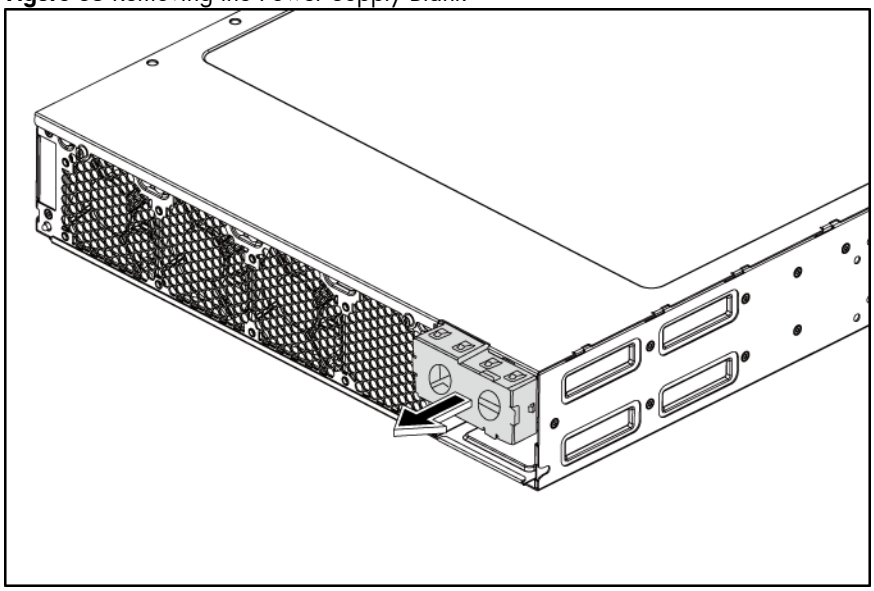
Figure 62 Removing the Power Supply



To reinstall the power supply:

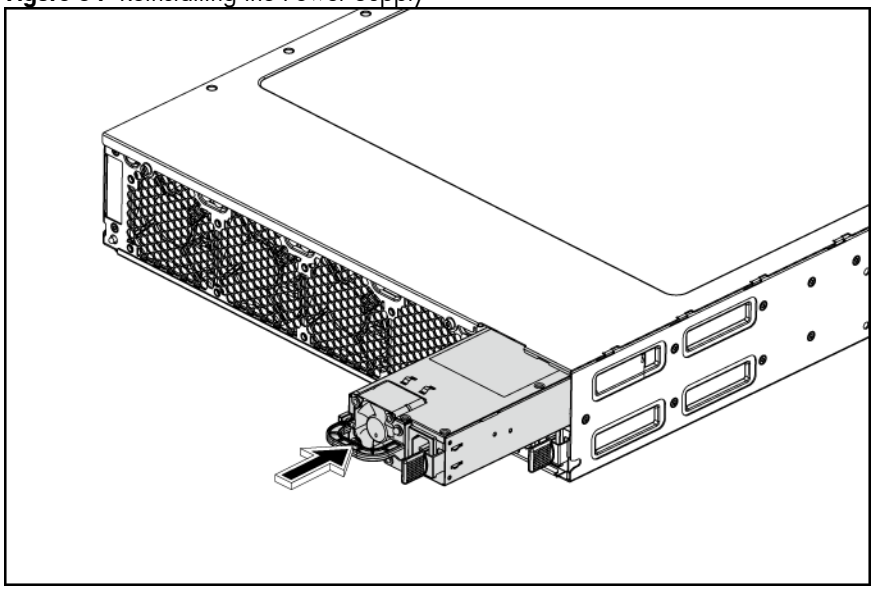
1. Remove the power supply blank from the power supply cage.

Figure 63 Removing the Power Supply Blank



2. Slide the power supply into the power supply bay until it snaps into place.

Figure 64 Reinstalling the Power Supply

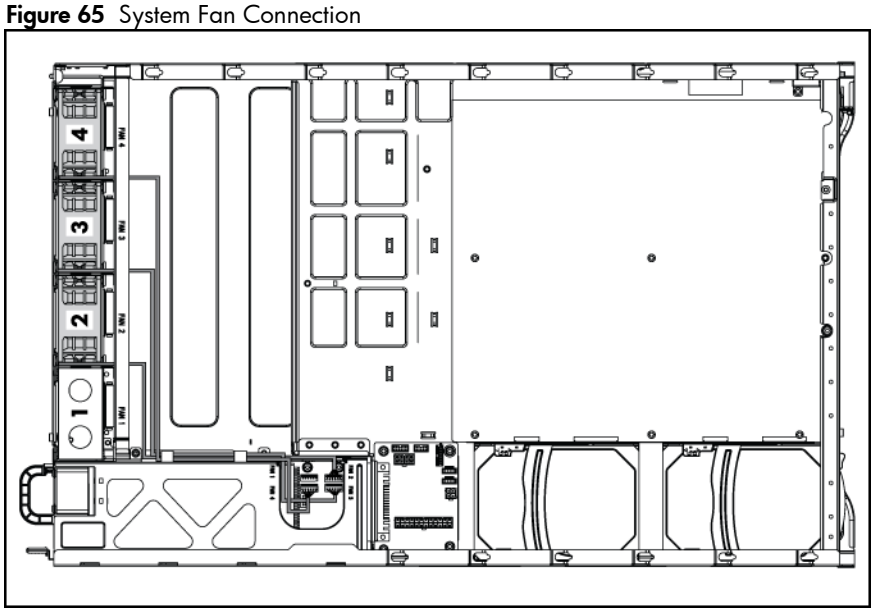


System fan

The server can support either three or four system fans located at the system fan cage of the chassis rear. System fan 1 is optional.

The figure below identifies the system fans by their device number and shows their corresponding cable connections.

Figure 65 System Fan Connection



Device number	Connector
System fan 1	J6 on the personality board
System fan 2	J8 on the personality board
System fan 3	J10 on the personality board

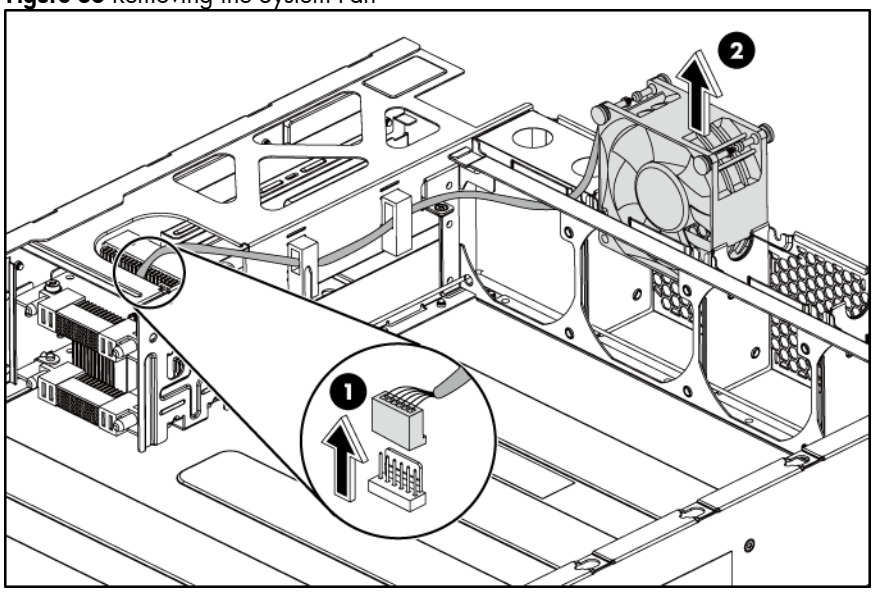
Device number	Connector
System fan 4	J11 on the personality board

A new system fan can be installed to allow the server to operate properly in case a default system fan becomes defective.

To remove the system fan:

1. Power down the server.
2. Disconnect the power cord(s).
3. Unlock the server if necessary and remove the top cover as described in the section System cover.
4. Disconnect the system fan cable from its corresponding board connector.
5. Squeeze the release tab on the system fan to release it from the chassis.
6. Lift the system fan away from the chassis.

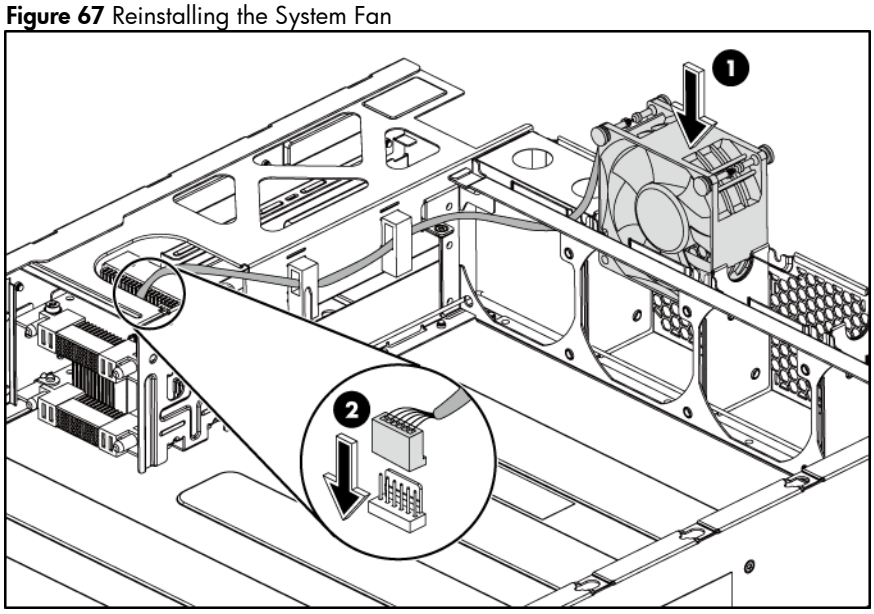
Figure 66 Removing the System Fan



To reinstall the system fan:

1. Hold the system fan and press it into the system fan bracket.
2. Connect the system fan cable to its corresponding board connector.

Figure 67 Reinstalling the System Fan



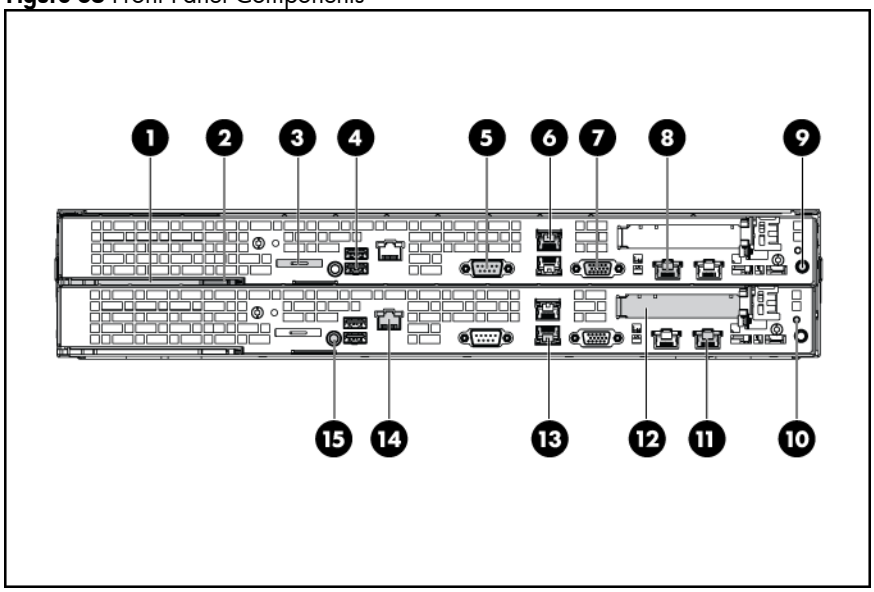
Connectors, switches, and LEDs

This chapter contains illustrations and tables identifying and describing the connectors, switches, jumpers, buttons, and LED indicators located on the front panel, rear panel, and system board of the HP ProLiant SL165z G7 server.

Connectors and components

Front panel components

Figure 68 Front Panel Components

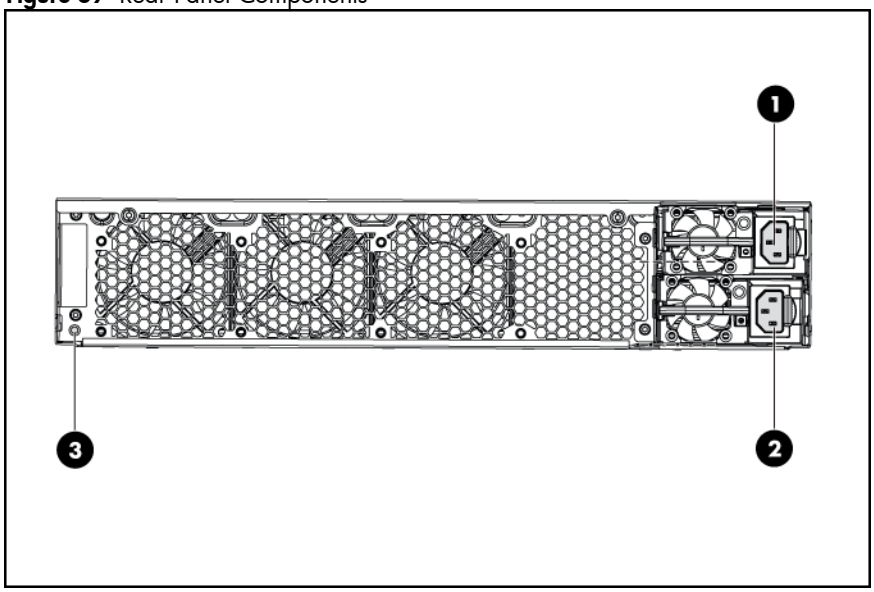


Item	Description
1	Tray handle
2	Tray latch
3	SD reader port (optional)
4	Front panel USB 2.0 port 0/1
5	Serial port
6	GbE LAN port for NIC 4
7	VGA port
8	GbE LAN port for NIC 2
9	Power switch/LED
10	System health LED
11	GbE LAN port for NIC 1

Item	Description
12	Low-profile PCIe expansion card slot cover
13	GbE LAN port for NIC 3
14	Mgmt port (optional)
15	Front UID switch/LED

Rear panel components

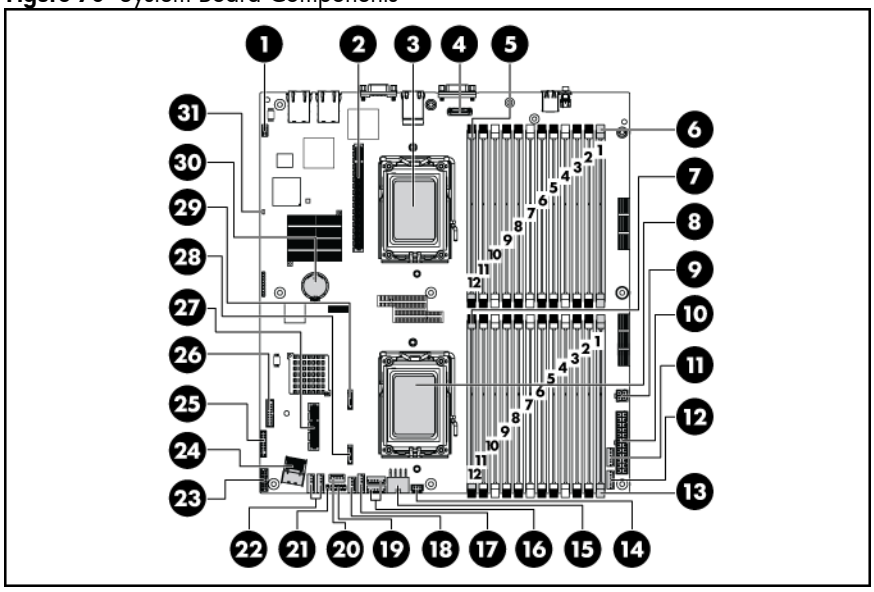
Figure 69 Rear Panel Components



Item	Description
1	Power supply 2 cable socket
2	Power supply 1 cable socket
3	Rear UID LED

System board components

Figure 70 System Board Components



Item	Designator	Description
1	J1	System maintenance jumper
2	J301	PCIe x16 slot
3	CPU1	Processor 1
4	J11	Mgmt card connector
5	J110	DIMM slot 12 for processor 1
6	J103	DIMM slot 1 for processor 1
7	J210	DIMM slot 12 for processor 2
8	J54	4-pin power connector
9	CPU2	Processor 2
10	J52	24-pin power connector
11	J61	Fan connector 1
12	J62	Fan connector 2
13	J203	DIMM slot 1 for processor 2
14	J65	Backplane I^2C connector
15	J53	8-pin power connector
16	J63, J64	Fan connectors 3/4
17	J65	Fan connector 5
18	J49	Internal USB 2.0 port
19	J81	SD card USB 2.0 port
20	J8	Front panel USB 2.0 port

Item	Designator	Description
21	J100	SAS LED connector
22	J36, J69	Fan connectors 6/7
23	J13	Mini-SAS connector for SATA
24	J55	Power backplane control connector
25	J98	Front panel header
26	J56	TPM connector
27	J78	PCIe x4 slot
28	J23	ODD 1
29	J20	ODD 2
30	BH1	3 V CMOS battery (CR2032)
31	J6	NMI jumper

CAUTION: The TPM is not a customer-removable part.
Any attempt to remove an installed TPM from the system board breaks or disfigures the TPM security rivet. Upon locating a broken or disfigured rivet on an installed TPM, administrators should consider the system compromised and take appropriate measures to ensure the integrity of the system data.

If you suspect a TPM board failure, leave the TPM installed and remove the system board. Contact an HP authorized service provider for a replacement system board and TPM board.

Jumper

Each system board contains a system maintenance jumper (J1). **Table 4** describes the jumper settings.

Table 4 System Maintenance Jumper Setting (J1)

Jumper	Status (default=off)
A	Clear BMC password
B	Recovery BMC
C	Recovery BIOS
D	Clear CMOS

LED indicators

This section contains illustration and descriptions of internal and external status LED indicators located on the:

- Front panel
- Rear panel
- System board

These LED indicators aid in problem diagnosis by indicating the status of system components and operations of the server.

Front panel LED indicators

The front panel LED indicators allow constant monitoring of basic system functions while the server is operating.

Figure 71 System Health LED Indicator Location

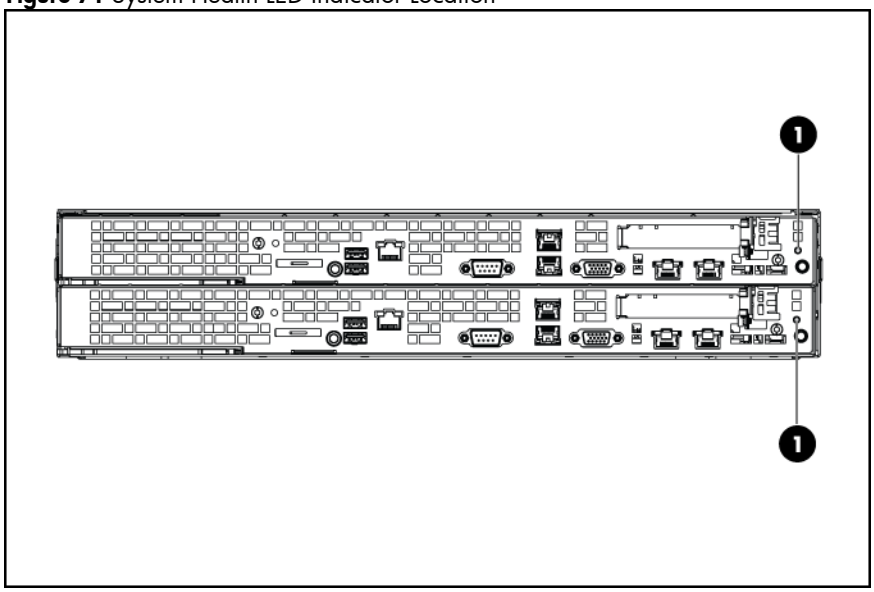


Table 5 System Health LED Indicator Status

Components	Status	Description
System health LED indicator	Flashing red	Critical system failure detected
	Flashing amber	System degrade
	Green	System in on and no failure detected
	Off	System is off and there is no failure prior to system power off

Figure 72 Front UID LED Indicator Location

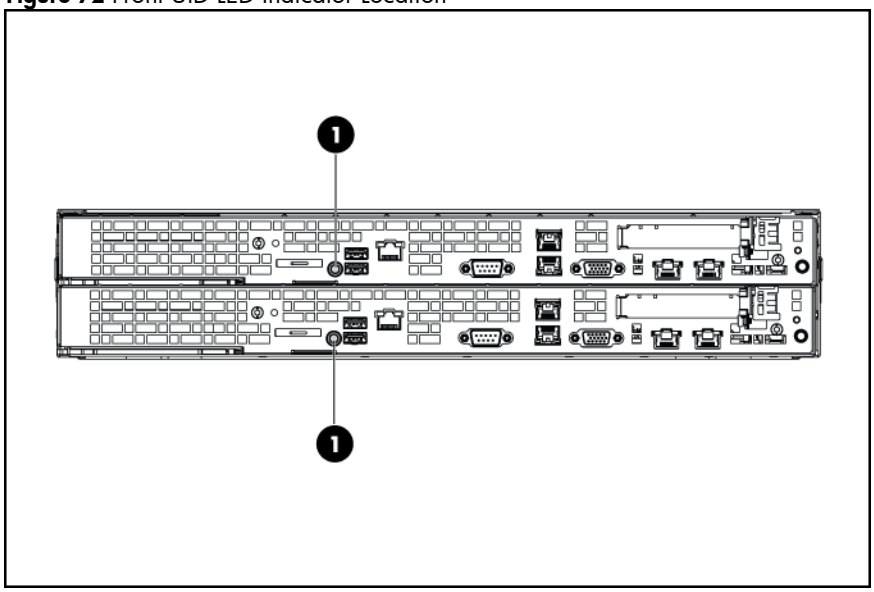


Table 6 Front UID LED Indicator Status

Components	Status	Descriptions
Front UID LED indicator	Steady blue	Identification
	Flashing blue	System is being remotely managed
	Off	Off

Figure 73 Power LED Indicator Location

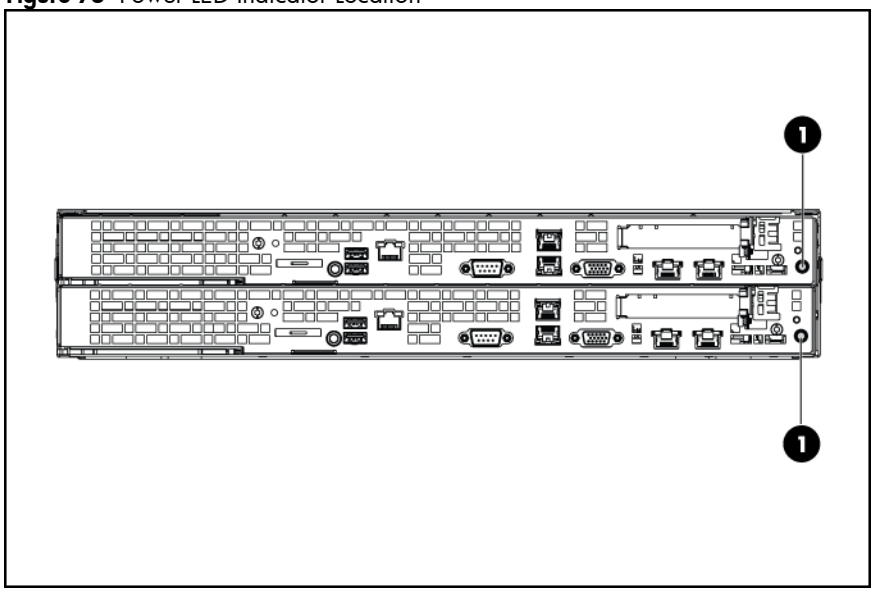


Table 7 Power LED Indicator Status

Component	Status	Description
Power LED indicator	Steady green	The server is operating normally
	Steady amber	The server is system off or in hibernation with A/C power
	Steady red	Critical event happens to the server. Please refer to SEL for details
	Off	The server is system off without A/C power

The LAN port on the front panel has two LED indicators that allow monitoring of network activity.

Figure 74 LAN LED Indicator Location

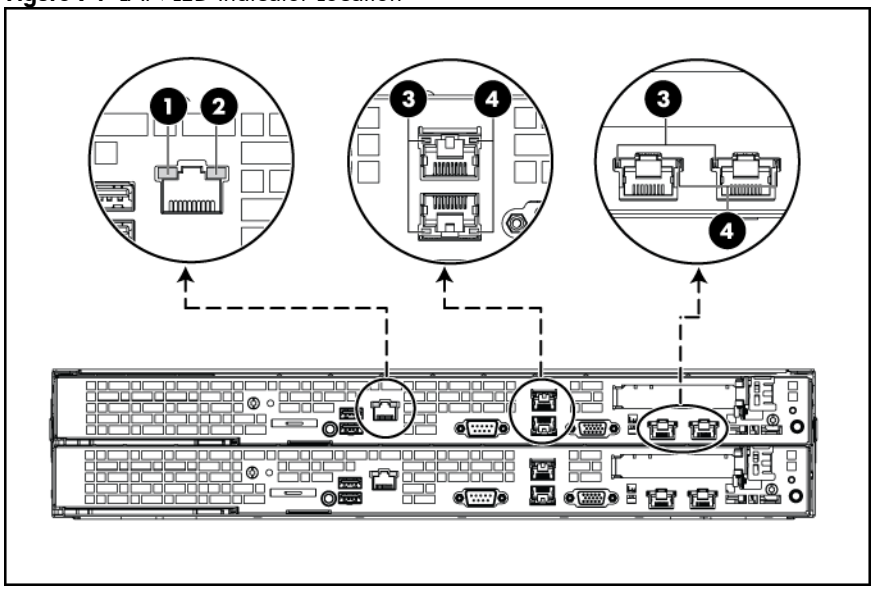


Table 8 LAN LED Indicator Status

Item	Component	Status	Description
1	Mgmt port activity LED indicator (optional)	Flashing amber	LAN is active
2	Mgmt port link LED indicator (optional)	Steady green	Linking at 100 Mbps speed
		Off	No connection or linking at 10 Mbps speed
3	NIC activity LED indicator	Flashing green	Linked and activity on the network
		Off	No connection or linking at 10 Mbps speed
4	NIC link LED indicator	Flashing green	LAN is active
		Steady green	LAN is linking
		Off	No connection

Rear panel LED indicator

Figure 75 Rear UID LED Indicator Location

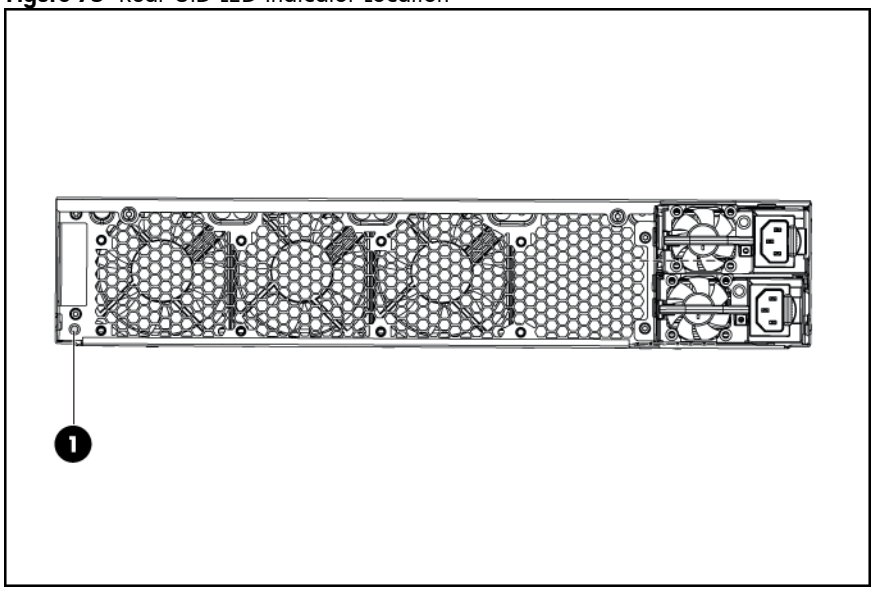


Table 9 Rear UID LED Indicator Status

Components	Status	Descriptions
Rear UID LED indicator	Blue	Identification
	Flashing blue	System is being remotely managed
	Off	Off

System board LED indicator

Each system board contains one LED indicator for use during troubleshooting operations.

Figure 76 System Board LED Indicator

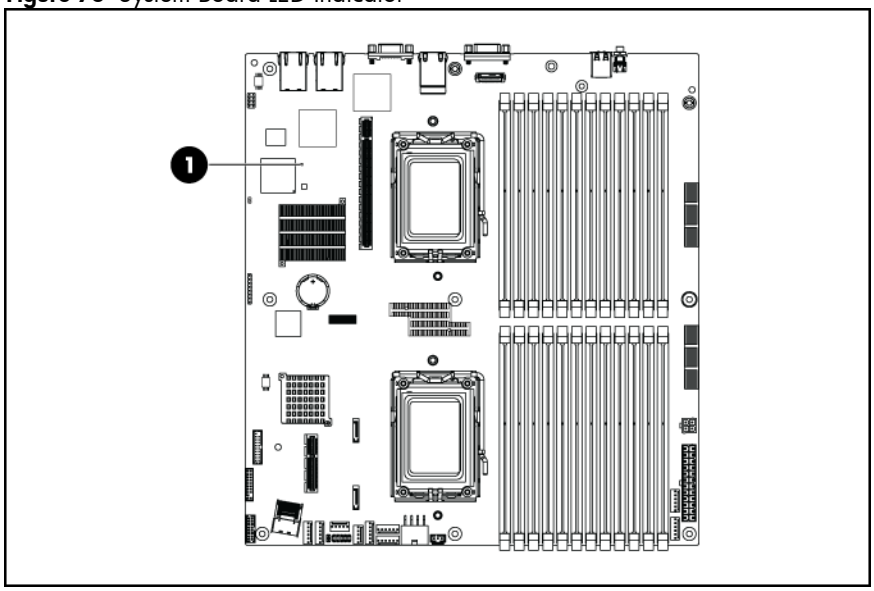


Table 10 System Board LED Indicator Status

Components	Status	Descriptions
BMC activity LED indicator	Steady green	BMC is power on and in initialization process
	Flashing green	BMC activity
	Off	AC is Off

Diagnostic tools and setup utilities

This chapter provides an overview of the Power-on Self-Test (POST), the POST error messages, and BIOS, SAS and SATA setup utilities.

BIOS software

The server uses BIOS to boot up the system. BIOS software is a ROM-based firmware that allows reliability, manageability, and connectivity for server platforms. This software contains a set of programs permanently stored in an EEPROM chipset located on the system board. These programs assist in managing, initializing, and testing the hardware devices installed on the computer.

BIOS software allows you to:

- Perform configuration from the BIOS Setup Utility

  Using the Setup Utility, you can install, configure, and optimize the hardware devices on the system board. In addition, you can set various features such as serial console redirection, PXE boot, and much more.
- Initialize hardware at boot up using POST routines

  During power-on or warm reset, the BIOS perform Power-on Self-Test (POST) routines to test system components, to allocate resource for various hardware devices, and to prepare the system to boot to various operating systems.

BIOS Setup Utility

The HP server BIOS Setup Utility is used to configure five primary menu selections:

- Main
- Advanced
- Boot
- Security
- Exit

Accessing the BIOS Setup Utility

1. Turn on the monitor and server.
2. If the server is already turned on, save your data and exit all open applications, then restart the server.
3. When the HP logo is displayed during POST, press **F10** into BIOS Setup Utility. If you fail to press **F10** before POST is completed, you will need to restart the server.
4. The first page displayed is the Main menu showing the Setup Utility menu bar. Use the left (←) and right (→) arrow keys to move between selections on the menu bar. Use **Enter** key to select items within a menu.

Navigating through the Setup Utility

Use the keys listed in the legend bar on the right of the Setup screen to navigate through the various menu and submenu screens of the Setup Utility. **Table 11** lists these legend keys and their respective functions.

Table 11 Setup Utility Navigation Keys

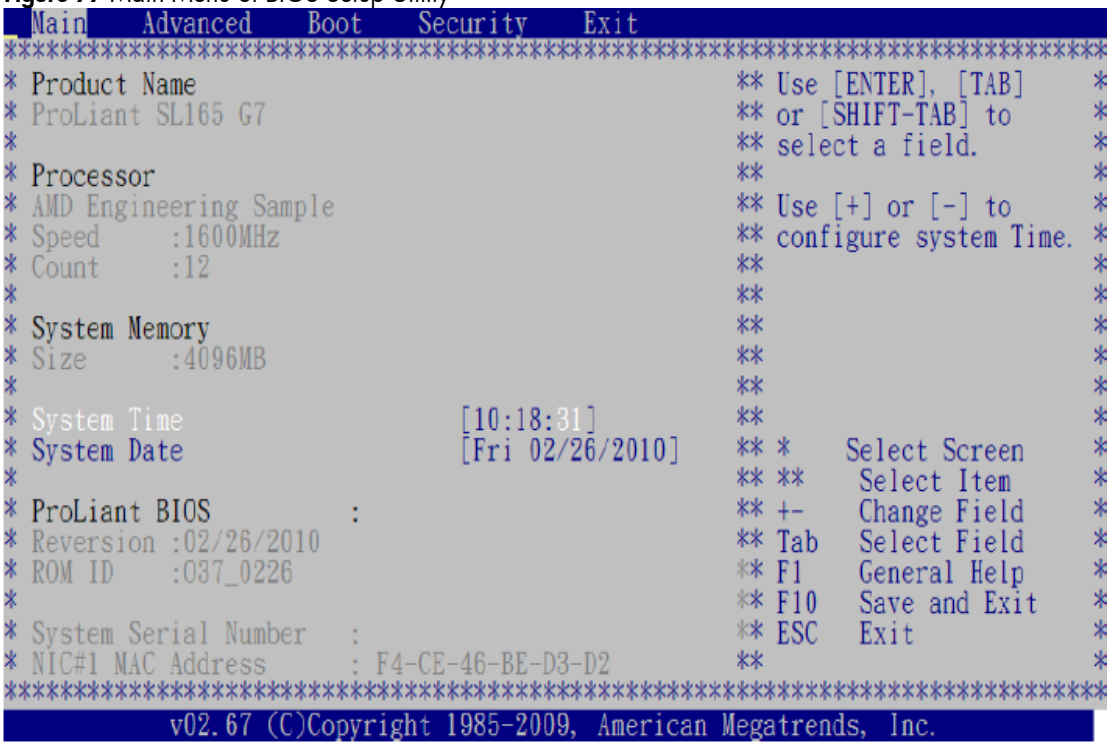
Key	Function
← and →	Select different screens.
Enter	Select items in each menu.
Enter, Tab, or Shift-Tab	Select a field value or display a submenu screen. Display more options for items marked with ▶.
Esc	Exit the CMOS Setup menu.
<+>, <–>	Configure the system time or change field.
F1	To bring up the General Help window. The General Help window describes other Setup navigation keys that are not displayed on the legend bar.
F10	To save changes and exit the CMOS Setup Utility.

Setup Utility menu bar

The BIOS Setup Utility provides a menu bar with the menu selections. The menu bar choices are described in the topics below.

Main menu

Figure 77 Main Menu of BIOS Setup Utility

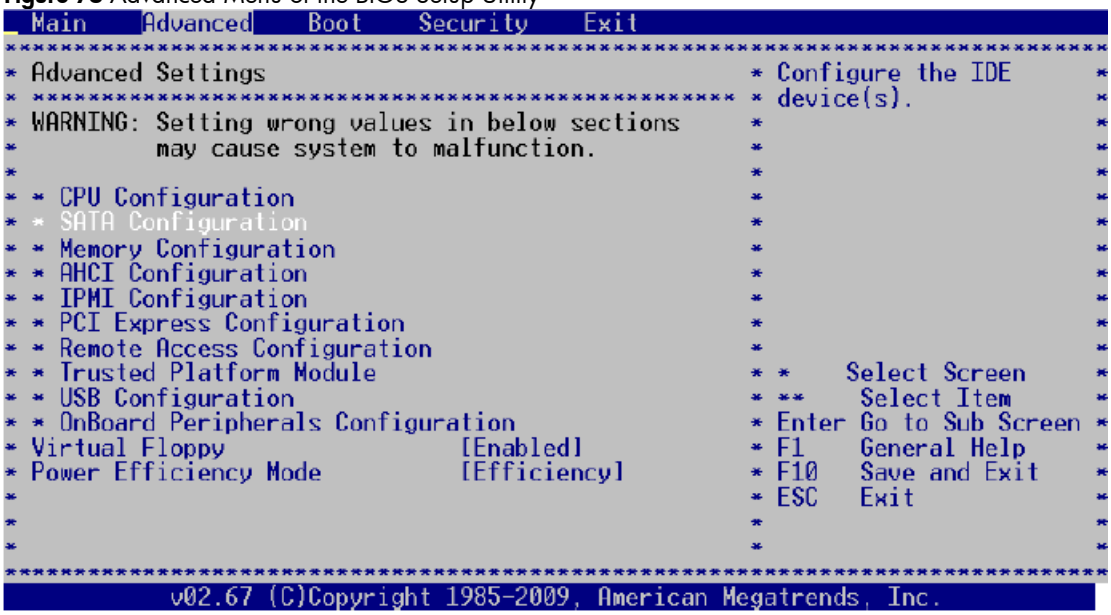


Use this menu to configure the following items:

- View product name.
- View processor information and system memory size.
- Set system time and date.
- View BIOS build date and version.
- View system serial number.
- View NIC#1 MAC addresses.

Advanced menu

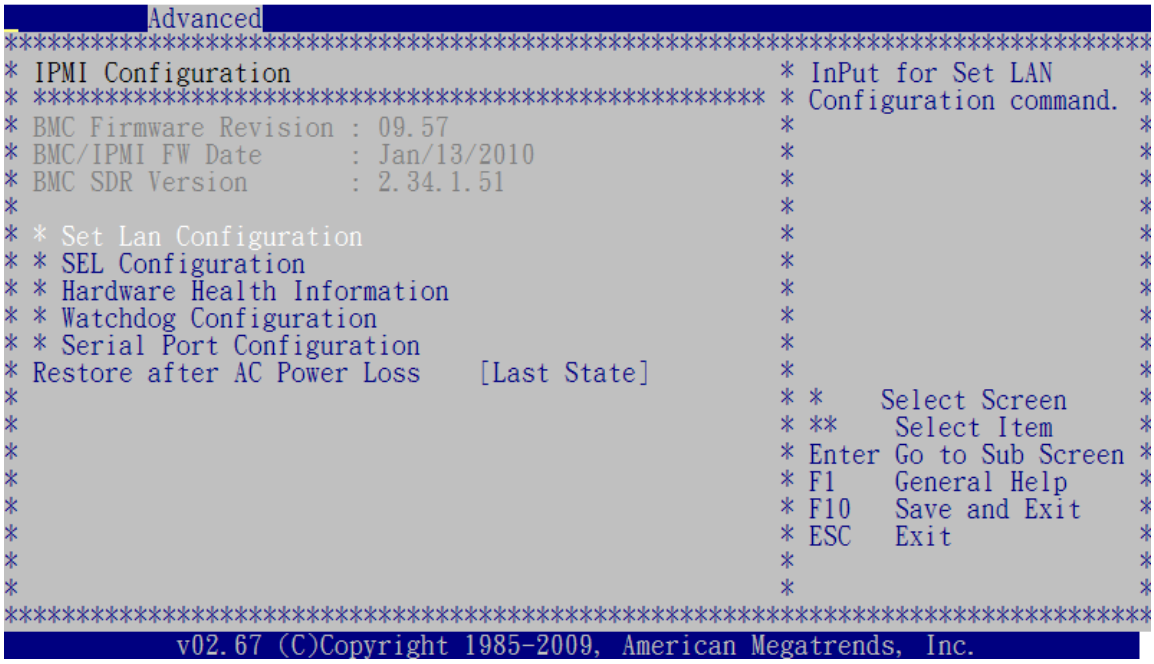
Figure 78 Advanced Menu of the BIOS Setup Utility



⚠ **WARNING:** Incorrect settings may cause the server to malfunction. To correct the settings, press the **F9** key to restore the default settings.

- **CPU Configuration**—Configure CPU settings.
- **SATA Configuration**—Configure IDE settings.
- **Memory Configuration**—Configure memory settings.
- **AHCI Configuration**—Configure AHCI settings.
- **IPMI Configuration**—Configure IPMI 2.0 settings.
- **PCI Express Configuration**—Configure PCI Express settings.
- **Remote Access Configuration**—Configure the remote access settings.
- **Trusted Platform Module**—Configure trusted platform module.
- **USB Configuration**—Configure USB settings.
- **OnBoard Peripherals Configuration**—Configure the settings of onboard peripherals.
- **Virtual Floppy**—Enable/disable virtual floppy.
- **Power Efficiency Mode**—Select the power efficiency mode.

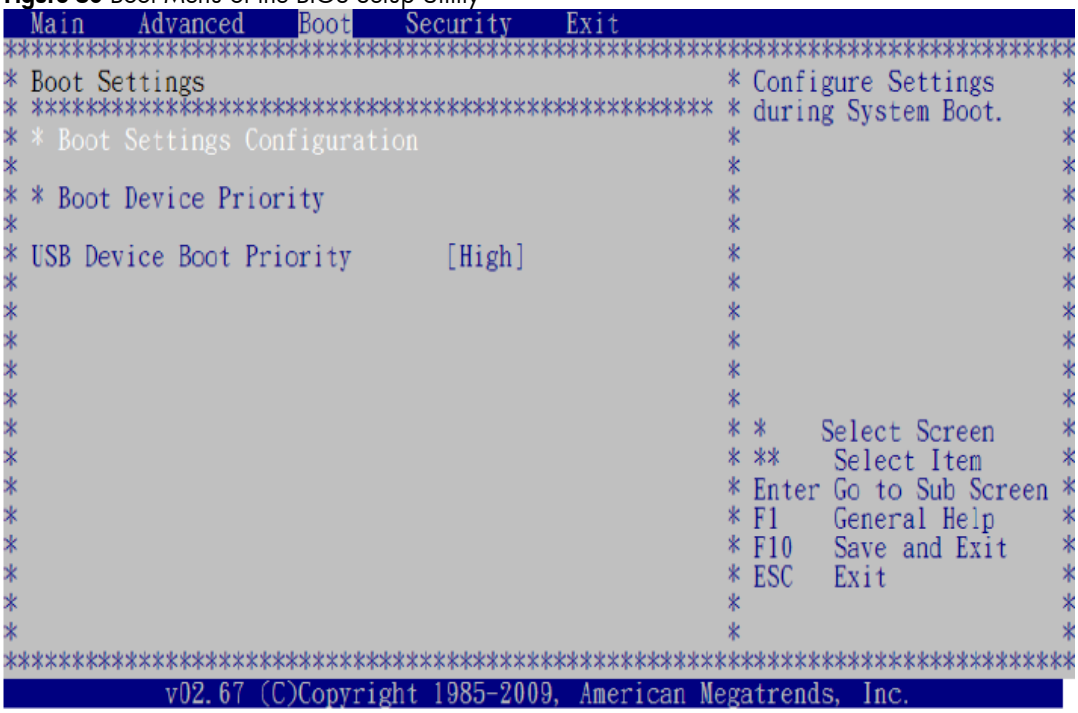
Figure 79 IPMI Submenu of the BIOS Setup Utility



- **BMC Firmware Revision**—Display the version of the BMC hardware and firmware.
- **BMC/IPMI FW Date**—View BMC/IPMI FW date.
- **BMC SDR Version**—View BMC SDR version.
- **Set LAN Configuration**—Set LAN settings.
- **SEL Configuration**—Display BMC event log.
- **Hardware Health Status**—Set temperature and fan rotation rate.
- **Watchdog Configuration**—Configure watch dog timer status.
- **Serial Port Configuration**—Configure serial port connection settings.
- **Restore after AC Power Loss**—Use this screen to restore the AC power setting.

Boot menu

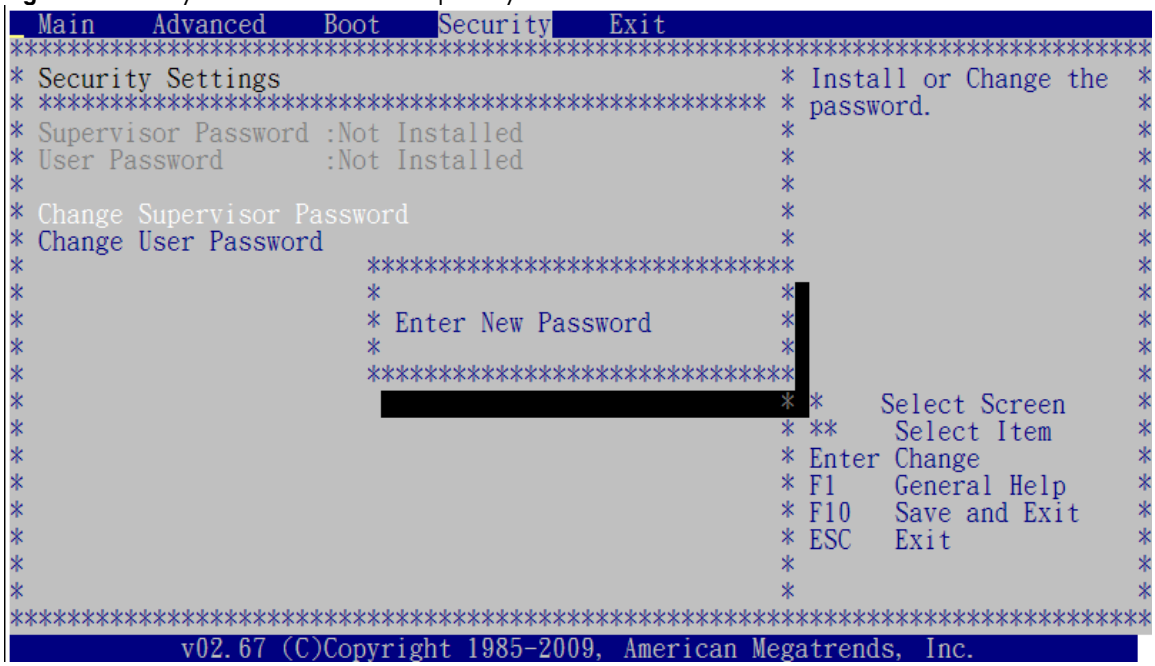
Figure 80 Boot Menu of the BIOS Setup Utility



- **Boot Settings Configuration**—Configure settings during system boot.
- **Boot Device Priority**—Use this screen to specify the order in which the system checks for a boot device.
- **USB Drive Boot Priority**—Configure priority settings for USB devices. Users can configure the BIOS to avoid attempting to boot non-bootable USB devices that are left plugged into the server during POST. The options are **High** (default) and **Low**.

Security menu

Figure 81 Security Menu of the BIOS Setup Utility

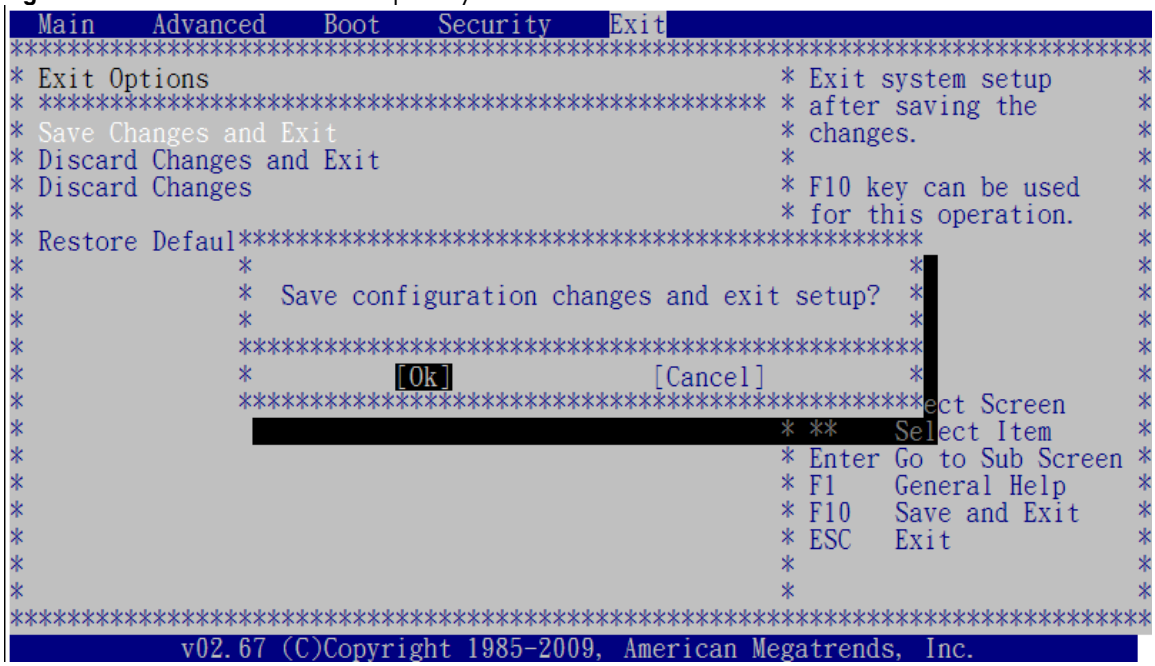


Use this menu to configure the following items:

- **Supervisor Password**—Indicate if a supervisor password has been installed to the system.
- **User Password**—Indicate if a user password has been installed to the system.
- **Change Supervisor Password**—Modify or change your supervisor password.
- **Change User Password**—Modify or change the user password.

Exit menu

Figure 82 Exit Menu of the BIOS Setup Utility



Use this menu to save changes or discard changes. When you save and exit, the server reboots.

- **Save Changes and Exit**—Save the changes you have made and exit the BIOS Setup Utility.
- **Discard Changes and Exit**—Exit the BIOS Setup Utility without saving the changes you have made.
- **Discard Changes**—Discard (cancel) any changes you have made. **F10** can be used for this operation. You will remain in the Setup Utility.
- **Restore Default Settings**—Load optimal default values for all the setup questions.

BIOS update

Please make sure your USB key drive diskette is bootable before unzip.

Please unzip factory or user into the root directory of USB key drive diskette.

Flash system BIOS steps:

1. Power on the system with USB key drive diskette.
2. Factory Tool - Execute the autoexec.bat

   User Tool - Execute the ROMPAQ.EXE
3. Follow the on-screen instruction to upgrade the system BIOS.

Power-on Self-Test (POST)

When the server boots up, a series of tests are displayed on the screen. This is referred to as Power-On Self-Test (POST). POST is a series of diagnostic tests that checks firmware and assemblies to ensure that the server is properly functioning. This diagnostic function automatically runs each time the server is powered on.

These diagnostics, which reside in the BIOS ROM, isolate server-related logic failures and indicate the board or component that needs to be replaced, as indicated by the error messages. Most server hardware failures are accurately isolated during POST. The number of tests displayed depends on the configuration of the server.

During POST you can:

- Press **F10** to access the Setup Utility.

POST error indicators

When POST detects a system failure, it displays a POST error message.

POST related troubleshooting

Perform the following procedures when POST fails to run, displays error messages.

If the POST failure is during a routine boot up, check the following:

- All external cables and power cables should be firmly plugged in.
- The power outlet to the server should be connected and works correctly.
- The server and monitor are both turned on. The bicolour status LED indicator on the front panel must be lit up green.
- The monitor's contrast and brightness settings are correct.
- All internal cables are properly connected and all boards firmly seated.
- The processor is fully seated in its socket on the system board.
- The heat sink assembly is properly installed on top of the processor.
- All memory modules are properly installed.
- If you have installed a PCIe accessory board, verify that the board is firmly seated and any jumpers on the board are properly set. Refer to the documentation provided with the accessory board.
- All internal cabling and connections are in their proper order.
- If you have changed the jumpers on the system board, verify that each is properly set.

Physical and operating specifications

This chapter provides physical and operating specifications for the HP ProLiant SL165z G7 server. Specifications include:

System unit

Table 12 Hardware Specifications

Item	Components
Processor socket	AMD G34 1944-pin socket
Processor	2P AMD G34-Opteron
Chipset	ATI SR5670/ATI SP5100
Hardware monitoring device	Embedded in ServerEngines Pilot 2 management controller
Gigabit ethernet controller	• Intel 82576 GbE controller for NIC • LO100i sideband support
Onboard storage controller	ATI SP5100
Embedded video controller	ServerEngines Pilot 2 management controller
I/O subsystem	• One PCIe x16 links with x16 slot • One PCIe x4 links with x4 slot
Memory	Twenty-four DDR3 RDIMM/UDIMM slots, up to 192 GB
Default media storage	SAS/SATA hard drive
I/O ports	USB 2.0 ports (two rear USB ports, one internal USB port, two front USB ports), video port, serial port, GbE port and mgmt port (optional).
Status LED indicators Front panel	
	• Front UID LED/switch • NIC link LED • NIC activity LED • Mgmt port link LED (optional) • Mgmt port activity LED (optional) • System health LED • Power LED/switch
Rear panel	
System board	• Rear UID LED
	• BMC activity LED

Table 12 Hardware Specifications

Item	Components
Power Supply unit (PSU)	750 W or 1200 W redundant, power supply
Thermal solution	Four system fans

Table 13 Physical Dimensions

Item	Description
System board platform	EATX (Extended Advanced Technology Extended)
System board dimension	12″ x 13″ (304.8 mm x 330.2 mm)
Server dimensions Rack	 448W x 87.9H x 714.7D (mm)
Server weight	Basic configuration (excludes monitor): TBD kg

Table 14 Environmental Specifications

Item	Description
Temperature: Operating Non-operating Storage Wet-bulb temperature	 +10 to +35° (+50 to +95°F) -30 to 60° (-22 to 140°F) -30 to 60° (-22 to 140°F) 38.7° (101.7°F)
Relative humidity: Operating Non-operating Storage	 10% to 90% (non-condensing) 5% to 95% 5% to 95%
Altitude: Operating Non-operating	 0 to 3049 meters (0 to 10,000 ft) 0 to 9146 meters (0 to 30,000 ft)
Thermal output (maximum operating) Acoustic emissions Normal configuration	392 W/hr LWad: 6.7 Bels (operating at room temperature) LWad: 6.7 Bels (Idle at room temperature)

Table 15 Power Supply Specifications

Item	Description
Dimensions (H x W x L)	1.515″ (H) x 3.4″ (W) x 7.736″ (L) excluding card edge connector.
Weight (approximate)	3 pounds

Table 15 Power Supply Specifications

Item	Description
Input requirements: Rated input voltage Normal line voltage	 90 VAC to 264 VAC 100 VAC to 120 VAC / 200 VAC to 240 VAC
Line frequency	50Hz – 60Hz
Rated input current	Max: 10A
BTU rating	N/A
Power supply output power: Rated steady state power Maximum peak power	 750 W N/A
Temperature range: Operating Storage/Shipping	 +5°C to +50°C –40°C to +85°C
Relative humidity: Operating Non-operating	 5% to 95% relative humidity, non-condensing. 5% to 95% relative humidity, non-condensing

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